A

LETTER

TO THE

WEST COUNTRY FARMERS,

CONCERNING THE

DIFFICULTIES AND MANAGEMENT

OF A

BAD HARVEST.

Written in the end of the Year 1772.

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TO THE

PRESES AND MANAGERS

OF THE

KILBARCHEN FARMER-SOCIETY.

Good Friends,

OF all laborious employments yours is the moſt uſeful, and perhaps, upon the whole, it is the moſt pleaſant and healthful. There are, however, inconveniencies, toils, and hazards attending it, which greatly diminiſh both its comforts and its profits. Theſe chiefly ariſe from your climate and ſeaſons, which in the weſt country, are not often very favourable to your operations and hopes. But of all the calamities attending huſbandry, none gives the farmer ſo much trouble as bad harveſt ſeaſons. Theſe produce at times the moſt painful anxiety: they increaſe the labours and expences of the huſbandman. And the more he has improved his fields, and has ſeen upon them the fruits of his ſkill and induſtry, the greater often is his loſs, and the more grievous his diſappointment. Nor does it add a ſmall matter to his grief, that his misfortune happens at the very time when he thought of enjoying the returns of all his labours. The happineſs, the joy of harveſt, which is ſo much celebrated in ancient writings, and has afforded their fineſt alluſions; that joy which, in happier climates, is ſtill the cauſe of mirth and ſong,

Husbandry a pleaſant and healthful employment.

Bad harveſt weather the greateſt affliction to the farmer.

you, my friends, seldom taste, in full security and ease. And mixed as it often is, with toilsome days and restless nights, with many cares and fears, with much loss and vexation, you can hope for no compensation for your losses, but in your own ingenuity and industry; no compassion for your sufferings, but in the mercy of heaven.

A bad harvest a public calamity.

Neither are you, my friends, the only sufferers, by bad harvests; the tradesman, the mechanic, and the common labourer, are all concerned in the quantity and the quality of the grain which you bring to market. Nay, the public may be sometimes said to suffer more from the injuries of a bad harvest, than even some of yourselves do. For on such occasions, the advanced price makes up in part the loss, at least to those of you who hold the largest farms. At the same time, in the smaller farms of the west, your own families often add to the demands upon the public markets, and help to increase the price of all the victual brought to them. In a word, I imagine, it will be found on trial, and may be consistent with the remembrance of the oldest and most experienced farmers, that victual never rose much above its ordinary price, but from the loss which the crop sustained in harvest. Nor was it ever disgusting to the taste, or hurtful to the health of man or beast, but from the injuries it received in that season.

The importance of a few hints on this subject.

For these reasons, amidst all the valuable instructions upon improvements, which are given by the writers on husbandry, a few hints on harvest-work may not be unprofitable. And that farmers may enjoy the benefit of them, as of all other instructions, I would desire that they would give them a patient hearing and trial.

The author's situation and

The writer of this letter does not claim the public attention, from his long experience in farming, nor from the number of observations which

which he may have made upon that buſineſs. His manner of life did not afford him ſufficient leiſure, nor his farm ſufficient opportunities for theſe purpoſes. What, however, he enjoyed of either he did not overlook; nor was he inattentive to things of common benefit, which he could learn from books, or from the obſervations and practice of others. Beſides, as he did not wholly depend upon his farm, nor was altogether indifferent to its advantages, he conſidered himſelf as in a middle ſtate; neither able to throw out expence upon extravagant projects, nor yet unwilling to run the riſk of a promiſing experiment; by which he himſelf, or any of his neighbours, could be inſtructed and convinced of its uſefulneſs. Upon theſe and the like grounds only, he claims at preſent a little of your time and attention.

claim to the public attention.

It has long been a queſtion with me, Whether, in reſpect to the difficulties and dangers in harveſt, it be better upon the whole, for the farmer to have his crops early or late in that ſeaſon? I have indeed no doubt of the advantage of early plowing, nor even of early ſowing ſuch grain as takes a long time to ripen. Nothing, I imagine, can be more abſurd, than for our farmers to have their plowing to begin in the month of March, and their ſowing in the month of April; while they ſuffer ſome of the fineſt weather in January, or February, to paſs without any field-employment. This neglect often obliges them to plow in all weathers, and either to ſow in a very indifferent ſeaſon, or to delay it till it is ſo late, that the produce is both thin in the grain, and comes by far too late in harveſt. But the earlineſs, or lateneſs of our harveſts does not altogether depend on our ſowing early or late in the ſpring, unleſs the difference be very great between the two. The odds at harveſt is oft as great between a warm and cold ſoil, and between early and late ſeed.

Whether an early or late harveſt be moſt eligible.

But

But unto whatever cauſes we aſcribe our earlineſs, or lateneſs in harveſt, the queſtion ſtill returns upon us, Which of the two is ſafeſt in general for the farmer? And having long conſidered it, and made ſeveral trials of both ways, I am ſtill unable to reſolve it to my own ſatisfaction. Having an early ſoil myſelf, I got the earlieſt ſeed, and both plowed and ſowed among the firſt; and for two or three years I triumphed in the earlineſs of my crop; my fields being ſometimes almoſt cleared before my neighbours had begun to reap. And as we are fond of having our good fortune appear to be the effect of reaſon and judgment, I uſed to ſay, that in our northern climate and ſhort ſummers, the very term *late*, whatever it was applied to, had ſomething in it diſagreeable and inconſiſtent, that could never be my choice—That my corns enjoyed a longer day, a much higher and warmer ſun, which contributed to perfect them more effectually, both before and after they were reaped; of all which the later corns were deprived. But I did not always rejoice in my own earlineſs. In ſome of the worſt harveſts my lateſt neighbours triumphed in their turn. Nor was there wanting on their ſide a ſhew of reaſon, that ſeemed to vindicate their negligence. Our Lambaſs floods, ſaid they, often vie with our equinoctial, or as they call them, our Bulloch ſtorms. Beſides, early ſeed corn is more apt to grow than late ſeed, for in this very readineſs to germinate conſiſts much of its earlineſs: add to all, if the weather is moiſt and rainy, corn of every kind grows ſtill more readily, on account of its being cut early in the ſeaſon, for then it has more of the ſummer's heat to make it ſpring. Theſe arguments ſeem to balance one another pretty nearly, and the latter end of harveſt being as often good weather as the beginning of it, it is impoſſible to ſay, whether an early or late harveſt can be moſt depended on. For my own

The author's trials on this head.

own part, I have been convinced of late, that a greater proportion of late ſeed is preferable upon light ſoils. I have not however given up the practice of ſowing it as early as poſſible, and I would recommend the ſame practice to thoſe eſpecially who have heavy ſoils; at the ſame time that they keep ſome of the earlieſt ſeed for their lateſt ſowings. Beans, for example, may be ſown with advantage, in February or earlier. And if our peaſe are not ſown then, they may be ſown with near as much advantage in the end of April. The ſame treatment may be given to late and early oats. And if the farmer has a proper aſſortment of ſeed, he can both catch the different ſeaſons of ſowing in ſpring time, and have his whole fields more under his command in the time of reaping them: which laſt muſt be of particular advantage in regard to harveſt-work; becauſe if one does not live in the neighbourhood of ſome town or village, from which he can be ſupplied with reapers at pleaſure, it muſt be peculiarly inconvenient for him to have all his fields upon him at once.

The reſult uncertainty.

I recollect no other management previous to the harveſt labour itſelf, that tends to facilitate the affairs of that ſeaſon, but one; it is this, That we take care to have our crops as clean as poſſible; for no corns ſuffer more from a bad harveſt, than thoſe which are full of graſs and other weeds; none ſucceed better than thoſe which are perfectly free of all mixture. This, amongſt many more important conſiderations, ſhould recommend to us, the practices in uſe with our Engliſh neighbours; I mean thoſe of hand-weeding and hand-hoeing, or rather thoſe of horſe-hoeing and ſummer-fallowing. Some of thoſe practices are uſed for the benefit of the preſent crop, and all of them are profitable for the ſucceeding crops. But though the ſafety of their corns in harveſt may be ſcarce conſidered in ſuch operations, yet do they

The cleanlineſs of corns an advantage in bad harveſts.

Weeding, hoeing, and ſummer-fallowing recommended.

they alſo enjoy this benefit of them, in an important degree, if I am not much miſtaken. One can ſcarce indeed account for their getting in their whole corns, ſo ſoon after reaping them, merely from climate, even though theirs ſhould be better than ours. Such a remarkable difference in this (for they will carry in their wheat on the day after it is reaped, and other corns in proportion) cannot be accounted for, but from a combination of different cauſes; of which their better climate may be one; better methods of preſerving corns after they are got in, may be another; and a third may be that which we have here touched at, the cleanneſs of their crops.

The dangers in harveſt ariſe from high winds and heavy rains.

But paſſing theſe previous operations, we proceed to the more immediate deſign of this letter; which is to treat of the dangers, and remedies of bad harveſt ſeaſons. I therefore obſerve, that the dangers in harveſt time ariſe from high winds, and great rains.

Of HIGH WINDS.

Of high winds.

There ſeems to be no effectual precaution againſt ſhaking, from violent winds; except a ſpecial attention to thoſe fields, which by their elevated ſituation, or north weſt poſition, ly more expoſed to danger. One ſingle obſervation may however be uſeful, to ſuch as can attend to circumſtances, and govern themſelves accordingly.

Their danger about the full and change.

It is, That high winds commonly happen during the ſpring tides, as they are called, that is, about three days before, and as many after the full and change. If a field therefore much expoſed, happens to be ripe at the approach of theſe periods, it ſhould, if poſſible, be cut down before they come on. Beſides, as ſuch winds commonly bring rain at laſt, in order to ſave the trouble of again introducing this circumſtance, I here alſo obſerve, That if we have a field ready for ingathering

thering on these occasions, it ought not to be deferred beyond these times. Though such observations may seem but trifling, to such as never thought of their importance, yet I must confess, I have paid a scrupulous regard to them these twenty years past; and have often cut down a field a day or two before the time, in hopes of escaping the winds expected at such periods; and even sometimes have done it at the distance, which I thought sufficient, in favourable weather, to win the corn before the next period of danger should overtake me: and I have frequently succeeded in both. If what I apprehended at the full, or more commonly at the change of the moon, did not happen, I did not repent my attention to it; because it might have happened, and have caught me unprepared.

After the husbandman has suffered by a shaking wind, his loss admits of no remedy, nor aleviation from the common practice in Scotland. In England, indeed, their custom is to mow their oats and barley, and to prepare them for the rick or barn, as they do hay; so that by raking them backwards and forwards upon the stubble, a good deal of the grain and ears are left upon the ground; a quantity equal perhaps to the loss sustained by a shakewind. But while the love of a fresh meat meal may have at first quickened invention, their perpetual waste by this method of reaping secures to them a customary remedy. They rear a good number of poultry, particularly geese, if they have waste grounds for that purpose; or they buy in a sufficient number from the wilds and mooriſh grounds, where they are commonly reared for sale. These they lay upon their cleared grounds, to gather up what is left upon them. In a few weeks after, they can bring them to market at a good advanced price; or in very good order to their own tables. By this management next to nothing is lost. The grain left upon the

The only remedy, a sufficient number of poultry.

ground brings the farmer as much perhaps, as it could have done, had it been carried into the barn upon the ſtraw. Beſides, ſuch is the taſte of our neighbours ſouthward, that had all of it been ſaved and gathered in, it would have probably gone to the ſame uſe in the court-yard, that it goes to in their cloſſes and open fields.

Another hint, of ſome uncertainty.

I have heard of expedients to prevent corns from being ſhaken, ſuch as laying them down flat upon the ground, with croſs ropes drawn over them, from end to end of the ridges. I never ſaw this practiſed, and imagine the effect muſt at beſt be but trifling; and even ſometimes dangerous, ſo far as it could be made effectual. For as great rains commonly ſucceed high winds, I ſhould think a field quite broken down and lying flat, in a very bad ſtate for ſuch an event, and which I would by no means hazard, could I help it. I do indeed remember a ſtorm, about ſixteen or ſeventeen years ago, that came on with wetneſs, and ended without damage to the ſtanding corn, though almoſt the whole high grounds were unreaped. It begun an hour or two before midnight, out of the ſouth, attended with a dreadful rain, which laid every ſtalk flat upon the ground. Betwixt one and two of the morning it turned directly north, as in January 13,—39, and it blew ſo hard and dry till morning, that in gathering a peaſe ſtack, which it had blown down, and ſcattered into the ditches and hollows, we found not a drop of water in them. Many trees were broke over, and tore up by the roots; many ſtacks and barns were blown down; yet in travelling four or five miles, I could not ſee one looſe corn pickle lying on the ground. Every ear and ſtalk adhered to the earth indeed, being laid ſo flat by the rain, that it did not riſe till gathered up by the reapers. The only loſs here lay in the difficulty of reaping it, and in the dirtineſs both of the ſtraw and corn. Nothing amazed me ſo much as to ſee no corn ſhaken, till

A narrative of a ſtorm without bad effects on the growing corn.

till I reflected on the circumſtances in the beginning of the ſtorm. For had the hard wind blown firſt, I was of opinion, that the fifth, or ſixth part, could not have been preſerved. The ſaving ſeemed to be providential, which we cannot always expect, nor can we imitate the means of it. I obſerve therefore, that our beſt ſecurity againſt high winds, is to gather a ſufficient number of hands, to cut down the field quickly, by day or by night. Our beſt remedy, after the damage is done, is a ſufficient number of poultry to gather up the grain; unleſs we generouſly leave it to the fowls of the air, who have a right to their ſhare, and notwithſtanding our moſt invidious oeconomy,—*Will*, as the poet ſays, *vindicate their grain*. So much for high winds.

The reaſon of this.

Of RAINY WEATHER.

With us, however, the moſt common harveſt calamities ariſe from the wetneſs of our ſeaſons. This makes our corns grow and rot in the fields; and is oft the occaſion of their being hurried into the barn or yard, where they ſuffer as much as they could have done without. Sometimes our wet weather is extreme, both in its degree and continuance. It ſeems to combat, and often conquers every ordinary meaſure of foreſight or precaution, and even diſappoints the utmoſt efforts of ingenuity and activity. Nevertheleſs as, in moſt caſes, it allows ſome ſcope for prudence and diligence, if the farmer thinks in time; it is highly requiſite that we beſtow a particular attention to this capital branch of our ſubject.

Wetneſs dangerous.

There are three periods of harveſt-work, in all of which a cloſs attention, and ſtrict caution may be uſeful to the farmer. I ſhall ſpeak particularly to them all.

Three periods of harveſt-work require attention.

The firſt is the period of cutting down;

The ſecond is the period of drying and wining;

The third is the period of ingathering, and ſecuring the crop.

In all theſe different periods directions and hints may be given, upon the proper management, and requiſite care, keeping conſtantly in our eye the dangers of a weſt country climate: for there the harveſt weather is frequently alarming; and if we had been all along ſufficiently aware of its dangers, one would imagine they might have produced the moſt ingenious contrivances, and ſecured to us the beſt cuſtoms of any corner in Scotland. But though we are far from being perfect in our methods of huſbandry, there may be ſtill ſomething found among us, in relation to harveſt-work, that is worth imitating. The more favourable weather, upon the eaſtern coaſts, ſeldom calls for extraordinary efforts of ingenuity; nor does it oblige the farmer to ſo ſtrict an adherence to good rules and cuſtoms. Hence, I have heard a very intelligent eaſt country farmer ſay, after he had for ſometime reſided in the weſt, That if he were to educate his ſon to be a compleat farmer, he would firſt teach him the Eaſt Lothian methods of culture, and then ſend him to the weſt, to learn harveſt-work. For he had obſerved, that when a bad harveſt happened in the eaſt, the farmers there were in hazard of being ruined by it; and that from a too general neglect of thoſe common precautions, which the frequency of danger obliged others to obſerve conſtantly. How far the caſe may be altered of late, I cannot well judge. Farming, for ſome time paſt, is become more an object of thought and ſtudy; and as we in the weſt have adopted ſome of the eaſt country methods of improvement, 'tis likely that they may be paying more attention to the precautions abſolutely neceſſary in the weſt.

But to come more directly to the ſubject, you'll remember,

remember, that the firſt period of harveſt-work relates to reaping, and what belongs to that operation. *Of reaping.*

Now, the firſt and moſt obvious rule here is, Never to cut down corns under rain, nor immediately after it, that they may always have time to dry before the reapers are ſet to work. Wet ſhearing is commonly the beginning of moſt of the evils which accompany a bad harveſt. And therefore this rule may be extended ſo far, as to caution farmers againſt ſetting out too early in a miſty morning. The avarice of ſome maſters ſometimes becomes a ſnare to them. When many ſhearers are beſpoke at a fixed wage for the day, ſuch maſters are deſirous of having a great day's labour out of them. But it would be better for themſelves, to truſt an hour in the morning, till they ſaw how the evening might make it up; or to loſe the time altogether, than to riſk any thing doubtful in the event. If indeed a dewy morning ſeems to uſher in a fine day, one may venture in ſuch hopes, to uſe the morning with freedom, and be ſufficiently ſafe. The ſame caution may be extended to corns that have been much lodged, under a continued dropping weather. They ought not to be touched upon their firſt dry appearance; becauſe their under parts, which ly cloſs to the ground, will be found to be very wet, and perhaps growing; for it requires more than one, or even two days drought, after wetneſs, to make a lodged field fit for reaping. If, however, the field is begun, for want of ſufficient attention to its real ſtate, or perhaps for want of other work, then the wet handfuls, if worth preſerving, ſhould be clapped upon an outſide, inſtead of being thrown careleſly into the very heart of the ſheaf. But if they feel ſoapie, and have begun to grow in the head, it would be better to leave them uncut, or to throw them down in parcels ſeparate from the ſheaf. They can be gathered afterwards

The firſt rule, not to reap in rain.

Extended.

Farther extended.

afterwards by themſelves, if they are found of any value. But it is ſcarce to be conceived, of how little value they often are; and yet that very little ſhall be gathered up with great care, and put into the heart of a ſheaf, where it never can dry; the farmer will encumber himſelf with it; and it may be, for the ſake of it, or the dampneſs which it occaſions, the ingathering of the whole field ſhall be delayed, and hazarded in the higheſt degree. Is it not better, to loſe at firſt frankly, what muſt be loſt at laſt, notwithſtanding all the labour that can be uſed, and all the riſk that muſt be run, in order to ſave it?

The ſecond rule.

Though all good farmers have acknowledged the danger of this practice, and declared openly againſt it, yet corns of all kinds will be cut wet at times. In this caſe, the next rule is, Never to bind them up wet if it can be helped:—I ſay, if it can be helped. So precarious is the ſtate of every thing depending upon the weather, that no rule can be made about it, wholly abſolute, or unconditional. Beſides, the commiſſion of one error generally leads to another. The farmer who has cut his corns wet, lies at the mercy of the weather, and is obliged ſometimes alſo to bind them wet; for by long lying on the ground, the ſide next it begins to grow, and the ſheaves muſt be ſet on end, to drain off the wetneſs and give them air. After this happens, they ſhould always be ſet up ſingle, as ſhall be directed afterwards, till they dry. If in their wet condition they are put up in ſtook or hut, they muſt certainly ſuffer by this management.

Argument.

From what has been ſaid above, you will eaſily perceive, that when victual has been cut and bound up in a wet condition, the farmer has put it wholly out of his own power and ſkill to preſerve or amend it. He muſt entirely depend upon the goodneſs of the weather; and which is more, none but the very beſt will ſerve his turn. But this,

this, however neceſſary and deſireable, he neither can command, nor has he right to expect. On the other hand, if the farmer cuts and binds up dry, he hath his corns ſo much in his own power and management, that he alone is to blame if they ſhould be afterwards loſt: for he can cover them up ſo effectually, that nothing but the worſt of weather, and of the longeſt continuance, can in any meaſure hurt them. If therefore the want of all other labour ſhould force him into any ſuch bad meaſures, it would be ſafer for him to cut or bind his beans, or peaſe, in a wet condition, than his wheat, oats, or barley. And if ever he tranſgreſſeth farther, it ſhould be with thoſe only of a clean, large, and firm ſtraw. Upon the whole, however, it would be more eligible to avoid, if poſſible, ſuch dangerous practices, with regard to all ſorts of ſtuff, rather than to venture them with any. A wiſe man will rather run the hazard of ſome expence, and loſs of time, than venture a danger which neither ſkill nor pains afterwards may enable him to remedy. In one word, in the worſt harveſts I ever ſaw, the loſs was chiefly in thoſe fields that were cut, bound up, and ſtooked wet. In the beſt harveſts I ever ſaw, the fields which had received that bad treatment at the beginning, have always ſuffered more or leſs in the end, whilſt every thing elſe hath eſcaped ſafe and well.

Rule third.

If then the farmer is conſcious to himſelf, that this error has been committed in any part of a field, though never ſo ſmall a part, inſtead of ſtooking it with the reſt, and ſuffering it to take its common hazard, becauſe the weather comes in fine and promiſing, my advice is to keep his eye upon it, and to take the firſt good day to unbind and expoſe the corn of it to the air, before it hath time to grow, and be irrecoverably loſt. Every labourer knows the difficulty of drying corn in that grown ſtate, and the loſs it muſt ſuſtain by being

being torn asunder for that purpose. Every one knows how easily it may be recovered, when taken early, if the weather be favourable. I once lost almost the whole of a set of land, by not knowing till the last, that it had been cut and bound wet. The oats were clean and good, as any ever I had. The weather was perfectly fine from the day it was cut, and the stooks stood all firm and well covered. On the day when it should have been got in, my servants examined the field, and pronounced it ready, without exception of any part. They returned too soon with their verdict, and I suspected the examination had been but superficial. I went myself, while the horses were getting ready. I found the sheaves on that particular set of land, to be double the ordinary size, for even this advantage had been taken of my absence; and to crown all, every sheaf was growing within. To be short, the horses were countermanded, and the sheaves were all spread out. Two days were spent in drying that piece, and after all, the half of the corn was lost; all of which might have been saved, in much less time at first. What a lesson was here, to such as could learn from it!

Rule fourth. I add but one caution more upon this period of harvest-work. It is, that the sheaves be made rather small than large; and at any rate, as near an equal size as can be obtained. The farmer should consider here, for he knows it well, that the smallest sheaf is soonest ready: and if there is a great inequality among them, the one half of the field must wait for the other, in the best weather; and in the worst weather, runs an unnecessary hazard, by the delay. I know the difficulty of managing a great number of reapers: but I know also what a prudent and peremptory master can do, if he stands to his point. If he indolently gives it up, he deserves the loss. It is better to give servants a smart word at first, than a galling reproach at last.

The

The second period of harvest-work comprehends the time wherein corns stand out in the field for drying and wining. *The second period of harvest-work.*

The management consists in using the best and most approved methods of setting them up, and covering them, so as both to dry them, and to preserve them most effectually, from the rains and storms, till they are ready for the barn or yard. *General management.*

Before we speak of setting corns out to the drought, we should first think of removing them from an inconvenient or dangerous situation, to one more convenient and safe. 1st, All corns upon the level banks of rivers, or on any hollow grounds that are naturally wet, or occasionally subject to land-floods and inundations, should be removed as soon as they are bound. How absurd is it to delay this, till the stooks are standing in water, or going off with the current? How foolish is it on these occasions, to see men scratching their heads, and bemoaning their loss, when they should be blaming their own stupidity? 2dly, Where there is no such danger from floods, it may be very inconvenient to leave corns for drying under the cover of rising grounds, woods, or high hedges, where there is no free circulation of air to be of service to them. They should be immediately carried to the opener fields, and higher grounds, where they have every advantage of situation. To delay this is at best but loss of time; in a bad harvest corns must suffer from their very situation, and by a late removal they must suffer by their carriage. Besides, the straw itself turns soft and brittle by long standing; so that it cannot again be set up aright, nor endure the least wind, without being demolished and blown about by it.

Two things premised.

To remove corns from the hazard of overflooding.

From calm situations.

Observe, after corns are carried from these inconvenient and dangerous situations, above-mentioned, into a more open exposure, the huts, or stooks *Kittling of corn bad.*

ſhould never be ſet up too near one another; leaſt by preventing the free paſſage of air among them, we ſhould even hurt the very intention of removing them.

Having premiſed theſe particulars, we return to the buſineſs of our ſecond period of harveſt-work, which is the management of corn, in order to fit it for ingathering. This to us is a moſt important, and ſometimes a very tedious work: for while other parts of the kingdom get in moſt of their corns in three, four, or five days ſtanding, when the weather favours, ours take commonly twelve or fourteen days, with all advantages; and in bad ſeaſons half as many weeks, if not more. The queſtion then is, in what manner they ſhould be ſet out, for the beſt advantage, both of wining and protecting them? Now, we have three different methods of ſetting out wheat, barley, and oats.

Viz. { Gayting, Stooking, and Hutting.

And though theſe different operations may be generally known, and practiſed through Scotland; yet there are better and worſe methods of performing each of them. I ſhall therefore give a ſhort account of each, for the ſake of a few rules and cautions that may be annexed.

I. Of GAYTING CORNS.

Of gayting. This is performed by ſetting up a ſingle ſheaf ſeparately. If the ſheaf is bound too near the bottom for the purpoſe, the farmer firſt of all draws

The manner of doing it. up the ſtrap a little towards the crop end; then ſetting the whole down upon the ground, with ſome force, in order to beat in the inequalities of its bottom, he ſpreads this out with one hand in a circular form: and, as he leaves a little vacancy in the middle of the circle, he admits the

the air into it by a ſmall opening towards the wind ſide. Laſt of all, collecting together the looſe heads, and twiſting them about the top, he leaves it to its chance.

The uſe of it.

The uſe of gayting is chiefly for preſerving wet and green corns, that need immediate drying; and in their wet condition, cannot ſo properly be put together in ſtooks or huts. The coarſer the ſtraw and larger the ſheaf, the more is it fit for ſtanding ſingle, and the more does it require gayting. The operation ſeems to be ſimple; yet errors are often committed in performing it. The firſt that occurs, is an attempt to widen too much the circle of the bottom on which it ſtands; and thereby breaking too much of the ſtraw below the ſtrap. The intention here indeed is, to make the ſheaf ſtand better upon an enlarged baſe; and for this purpoſe it is thruſt down ſtrongly. But the effect is the very contrary of that intention; for after the ſtraw is entirely broke, it cannot ſtand at all, in any weather. The ſecond error lies, in breaking down the ſtraw all round above the ſtrap, in order to let in to the heart of the ſheaf, the ſun and air from above; but unleſs the field can be carried in immediately, this too defeats its own intention. For a ſpread head preſents to the rain a kind of cup or filler, to take into the heart of the ſheaf all that falls within half a yard, or three quarters diameter. Beſides, whatever is below the cup above formed, hangs over the ſtrap, like the hair of a new combed head, and effectually prevents both ſun and wind from reaching the wetteſt part of all the ſheaf. Every farmer knows this lies in the ſtrap itſelf, and in that part of the ſheaf which is immediately within it, and ſtraitened by its binding. How have I been galled oftimes to ſee theſe errors going on and perſiſted in, from abſolute thoughtleſſneſs? In ſhort, a ſervant ſhall ſcarce paſs through a gayted field, where he has no work at the time,

Errors committed.

Breaking the ſtraw below the ſtrap.

Breaking it above the ſtrap.

but he will, after repeated admonitions, ſpoil every gayted ſheaf within the reach of his arm. The true figure of a right gayted ſheaf is that of a circular cone, which, while widened at the bottom, ſhould be drawn, as near as poſſible, to a point at the top, to prevent the rains from ever entering it. And the only management of them when fallen down, is to ſet them up again with all the care poſſible. If the wind blows hard, ſo that they cannot ſtand ſingle, then one of them ſhould be ſet to the leeward of another, leaning on it; and if one will not do to ſupport the other, a third, in the ſame poſition, may ſecure the whole, till the ſtorm blows over. The ſtraw never ſhould be broken, either above or below the ſtrap, but when one thinks of getting in the field, and that there ſhall be no further occaſion for ſetting up the ſheaves any more. Gayting, if the work is wiſely managed, is indeed the ſpeedieſt, and moſt effectual way to dry wet, or to deaden green corns. It would however be convenient to put in ſuch as ſoon as they are ready. If this cannot be done, they ſhould be hutted up, and covered from danger in the field itſelf. It is true, that large ſheaves are not ſo fit for huts; and broken ſtraw, according to the common ſtate of gayted corn, will not ſtand in ſtooks. The corns ſhould, however, be ſome way protected, when ready; otherwiſe one ſhower in this condition, will undo a week's attention, and put them in a worſe ſtate than ever. And if the farmer recollects, that rain is much more hurtful to old ſhorn corn, than at any former period, he will ſcarce heſitate, in ſecuring what is now ready, but ſtill in great danger.

The figure of a gayt ſheaf.

The inputting or covering of gayted corn not to be delayed.

Of STOOKING CORNS.

The ſecond method of ſetting out corns, in common uſe, is ſtooking. When corns are cut and

and bound up dry, ſtooking, though not the quickeſt way of wining is yet the beſt way to preſerve them in dangerous weather, till they are quite ready for ingathering. Good methods muſt however be uſed in putting up the ſtooks, and great care uſed in keeping them up; otherwiſe every puff of wind overturns them, and diſappoints the intended ſecurity: whereas, if rules are ſtrictly obſerved at firſt, and proper care taken afterwards, it is hardly poſſible for the farmer to ſuffer any material loſs, even in a long courſe of bad weather.

A ſtook conſiſts of ten or of thirteen ſheaves.

A ſtook, in the weſt country faſhion, conſiſteth either of ten ſheaves, eight of which are ſet upon the ground, and may be called ſtandards, two are reſerved for their covering, and are called hoodings; or it may conſiſt of thirteen ſheaves, ten of which are ſet upon the ground, and three are reſerved for hoodings. The deſign of the odd ſheaf here, is, that when ſet in the middle, as a rider, it may ſupport the heads of the end hoodings; which in ſo long a ſtook would, without it, fall down too much towards the level, before they reached one another, ſo as to give and to receive mutual ſupport from each other. Thus the hoodings might be in danger of growing, like any other ſheaf that lies long on the level ground: for all ſheaves ſuffer in wet weather, from their level poſition, or their approaching too near it; whereas the wetneſs drains off the more quickly, the more they are raiſed in their tops. In the ten ſheaves-ſtooks the middle rider is ſcarce neceſſary; becauſe the end hoodings, if choſen large enough, meet more readily for the ſupport of each other, before they incline too much to the level. After all, when a ten ſheaves-ſtook hath long ſtood under a weight of rain, the hoodings begin to ſink their heads, and grow faſt. This invites the crows and pigeons, to ſit down in great numbers upon them, which preſs them down ſtill lower;

The rider, and its uſe.

Not neceſſary in a ten ſheaves-ſtook.

and

and while they consume the grain, they also promote the growth of what they leave. In these events I have often wished for, and have sometimes put in a middle rider between the hoodings; that by raising their heads a little, the rain might drain better downward, and the fowls might not have such sure footing, nor so much room to stand on. I likewise thought, that if my rider had been put in soon enough, the growing of the hooding, and the temptation to appetite, arising from a tendency towards it, might have both been prevented: for crows &c. are fond of corn when swelled, and ready to burst its chest; and perhaps more so from the sweet taste it may acquire by growing. And on the other hand, they scarce touch it, either in spring or autumn, till it begins to approach towards that state. What I have said above chiefly respects Polish oats; which (whether from the shortness of their straw or the weight of their head) I have always found most ready to sink down to a level as hoodings; and which also (whether from their natural taste, or aptness to grow) I have found most inviting to the birds.

Though sometimes convenient.

To prevent wetness and growing, & consequently the crows from sitting down on the hoodings.

As I prefer the ten sheaves-stooks, because the easiest dryed and win, I shall here give my thoughts, upon the best and surest method of putting them up. Suppose then two men employed, because they are sometimes necessary in windy weather, each of them takes a sheaf in every hand, and if the ground is level, he chooses them as near of a size as possible, without losing time; if the ground declines to any side, the tallest and heaviest goes to the lowest side. Then the labourers turning their faces to each other, every man sets down his pair together. This is done, by giving their bottoms a sufficient knock upon the ground, in order to beat in their inequalities, that they may stand solid. At the same time, inclining their heads towards each

Of the standard sheaves.

How set up.

each other, care is taken, that they be placed exactly oppoſite to, and bear equally upon, one another. This being done by both labourers, each of them again takes up another pair, which he chooſes and ſets by his firſt pair, with the ſame care and exactneſs. The reaſons for this accuracy are obvious, for if all the ſeveral pairs are not equally balanced, the heavieſt muſt in time puſh over the lighteſt. If they are not ſet exactly oppoſite to each other, they ſoon loſe their hold of one another; and ſliding down they lie acroſs the ſtook, and ſo ſet out their heads on both ſides of it, like the points of a St Andrew's croſs. Laſtly, If they are not ſet firm upon their bottoms, by a knock upon the ground, they ſtand only upon a few pens of their ſtraw that jut out beyond the reſt, and by their ſlight hold of the earth, they loſe their balance, and are either blown down, or twiſted out of their place, by every puff of wind. One may think lightly of theſe hints, as niceties of no conſequence; but if he were paſſing through a field negligently ſtooked, but ten days after it was ſet up, he would ſoon perceive the effects of careleſsneſs, in the diſtorted appearance of every ſtook. And if he had any concern in the field, he would ſoon feel the effects of ſuch general diſlocation: for every ſhower that fell, and every wind that blew, would hurt him greatly. Whereas, on the other hand, a field well put up at firſt, if it is not afterwards diſordered by ſtorm, will, at ſome weeks diſtance, ſtand firm and upright to the eye; and be able both to reſiſt a hard gale, and to defend an ordinary rain, incomparably beyond the other.

The reaſons for adhering ſtrictly to method.

When the eight ſtandard ſheaves of a ſtook are ſet properly, an open paſſage is left between the two ſides, ſo wide that a little dog could eaſily paſs through, from end to end of the whole. Further, though every ſheaf of the pair leans upon its fellow on the oppoſite ſide, yet ought not the end

An air paſſage from end to end.

Air paſſages acroſs.

end pair to lean upon the pair next them, ſo as to have their tops too cloſs upon one another; that even here ſufficient room may be left about the ſtraps, for the wind to paſs freely between pair and pair, when it blows acroſs the ſtook. Laſtly, When the ſtandard ſheaves are ſet up, care ſhould be taken to turn the corn knot of them all inwards, that it may be ſheltered from the weather. For it ſhall be ſhewn afterwards, that this is the firſt part of the ſheaf which begins to grow, when it is expoſed to wet weather.

The corn knot to be under cover.

Theſe are the rules and cautions that ſhould be obſerved in ſetting up the ſtandard ſheaves of a corn ſtook. After a little attention to the practice, it is performed with perfect eaſe and readineſs, by any labourer of common ſenſe. When this part of the work is done, the labourers proceed next to the hooding of the ſtook. For this purpoſe each man takes hold of the largeſt, greeneſt, or wetteſt ſheaf at hand, and prepares it for laying on, as a covering to the whole. But this being one of the moſt important operations for the harveſt ſecurity, a few rules and cautions become neceſſary here alſo.

Of hooding ſtooks.

A few cautions neceſſary.

The firſt caution is, to hood always with the crop end of the hooding uppermoſt. By this poſition, the rain that falls drains from the corn head downwards to the bottom of the hood ſheaf. Likewiſe, the corn being elevated above the whole ſtook, is expoſed to the free paſſage of the air, and to the full influence of the ſun for drying it. I have been told, that it is common in the eaſt, either not to hood at all, which in very bad ſeaſons is dangerous to the whole, or to hood with the bottoms uppermoſt: by this means the corn hanging down claps cloſs round the lower parts of the ſtandard ſheaves. But this alſo is greatly hurtful. For by ſuch a poſition, the corn of the hooding, inſtead of having the wetneſs drained from it, as above-mentioned, has it

The firſt. To keep up the crops of the hoodings.

it all drained to it; so that, by a constant seeping from above, it is kept long wet, even after the rain is over. Nay, there the wetness must abide; for the corn being wrapt about the bottom of the stook, lies so close to it, that it can leave no passage through itself for the transmission of the sun beams, nor the free circulation of the air or wind. Still more, though the outside of the corn should be hazzured by the sun or wind, the inside must ever be damp, from its nearness to the ground, and closeness to the damp bottoms of the standards.

I did not here depend wholly upon reasoning; it might be fallacious. For my own satisfaction, I have made repeated trials, year after year, and according to custom in the neighbouring rows of the same field. I can therefore assure the farmer, from undoubted experience, that the east country practice of putting up the bottoms, and keeping down the corn of their hoodings, is most pernicious. For, in these rows, I have seldom lost in wet seasons, less than triple the quantity of what I lost by our own method. All my reasonings therefore, in pages 21st and 22d, proceeded upon the supposition that the west country practice was used. An exception should be made of wheat, which presents a cup to the rain.

Experience the best instructor.

Our second caution in putting on our hoodings is, to open the sheaf under the corn knot, in order to lay it on with that side lowermost. The design of this is to preserve the corn knot from rain, under the cover and protection of the whole sheaf. For, as was already observed, that knot, retaining the rain, begins first to grow. It is no doubt easier to open the hood sheaf under the binder's knot, because at that place it was just now put together. Here therefore lies the temptation to laziness. But besides the laziness often imputed to servants, the ignorance and inattention of the farmer himself may be justly blamed, if he either

The second caution. To cover the corn knot from the weather.

Illuſtration from an old ſtory.

either does this himſelf, or ſuffers it to be done by any ſervant. I remember that, twenty years ago, after long wet and hazy weather, I croſſed a field both put up and hooded in this erroneous way; and perceiving its bad effects, I called out the farmer who was otherwiſe an active and ingenious man. I took notice to him, that all his hoodings were green at the corn knot, and begining to chip throughout the whole. I here reaſoned with him, for he could hearken to it——That a hard knot did not part with rain, like the ſtraight corn ſet up on one end. On this account, if the corn knot gets rain it begins firſt of all to grow. After which it almoſt never parteth with the wetneſs, till it be torn aſunder, and every ſtraw and pickle of it expoſed to the drought. I obſerved further, that when the corn knot is in this wet and growing ſtate, the moiſture of it will naturally communicate with, and infect the neighbouring parts of the ſheaf; eſpecially about the binding, where he could not but obſerve, that the grain was already begun to ſwell and chip; and had even ſtraitened the ſheaf to that degree, that no moiſture could paſs ſo as to drain downwards, which in a little would entirely deſtroy it. I likewiſe deſired him to examine the ſtandard ſheaves ſo ſet, and compare them with their neighbours, that had the corn knot concealed from the weather. He ſaw, and was fully convinced of his error, and never, I dare ſay, needed another leſſon on the point. In the mean time he loſt for that year near a third part of a ten acres field: by far too great a price for any piece of inſtruction, which he might have purchaſed much cheaper, with a little obſervation of his own, or a little attention to the conduct of his more experienced neighbours. That which aggravated his affliction was, that he was clever, and even knew himſelf to be ſo. What then can be expected of many, who may be ſaid, like the idols

idols of the nations, to have eyes but ſee not, ears but hear not, neither will they underſtand.

Stooks in danger of being blown down.

The prudent farmer, having ſtooked his field with all the care and exactneſs above recommended, looks back upon it with ſatisfaction and ſecurity; for it ſtands fair and upright to his eye: and conſcious of his care and pains about it, he perhaps thinks his labour over with regard to it, for that year. Indeed ſo it is, if the weather continues mild; yet, after his ſtooks have ſtood ten or twelve days in good weather, the ſheaves begin to dry, and turn lighter; and tho', if the weather continues, he hopes in a day or two to gather it in ſafely; yet let him not be too ſecure: the wind perhaps riſes from the ſouth, or ſouth weſt, and begins to blow off his hoodings; then gradually increaſing, it tumbles down and ſcatters all his ſtooks over the field. He ſtands aghaſt and terrified. But, while he is a dreaming what he ſhould do, a flood of rain comes on, and continues, till there is ſcarce a ſheaf in the field which is not thoroughly drenched. Here his whole labour is undone in an hour; hope deferred makes his heart ſick; danger increaſed leads him to deſpondence. This ſurely is a miſerable ſtate to the poor farmer. Let us ſee however, if there is no proviſion for, no precaution againſt, ſo deſolating a ſtroke. I imagine there is, and ſhall mention two ſecurities, which long uſe has recommended to myſelf.

Third caution.

To faſten on the hood ſheaves.

The firſt lies in a certain method of putting on the hood ſheaves. And this may be conſidered as a third caution in hooding. It is performed thus, After the hood ſheaf, ſplit as above directed, is laid on, and in the common faſhion ſpread about the end of the ſtook, the workman ſtanding at that end, graſps in each hand a parcel of the lappets of the hooding, which hang down on each ſide, and thruſts both his hands, thus filled, round the firſt pair of ſtandards next himſelf; this pair and hooding he draws gently towards his boſom, till he

gets room, between it and the ſecond pair, to croſs the handfuls over each other. This done, he lets go his hold of them, and with both his hands preſſes the whole (pair and hooding) gently back to their former poſition, till they take hold of the croſſed handfuls, that are now held between the firſt and ſecond pair of ſtandards. The whole of this operation is done in an inſtant, as ſoon as the hoodings are put on; and by the ſame hand that put them on, and alſo before he moves from his place. —But leaſt the croſſed handfuls ſhould lead in the wetneſs, which falls upon the hood ſheaf, towards the heart of the ſtook, where they themſelves terminate, a few looſe ſtraws, from the ſame lappets, may be ſpread over their place of entering, in order to carry the droppings down the outſide of the ſtook. So that, after the whole is finiſhed, the entry of the croſs handfuls is both covered from the weather, and even from the eye itſelf, as one paſſes along.

Proof by trial.

This operation I ſurely learnt of ſome body, and I ſoon convinced myſelf of its effects by a fair trial. I have had however difficulties in perſuading my ſervants to comply with it. And as I am fond of governing dependents, rather by their own underſtanding and conviction, than by the mere authority of a maſter, I have had many occaſions of repeating the ſame trials, to ſatisfy their minds. And as a hint to other maſters, my method was this, I allowed my ſervants to put up one row of ſtooks in any field, after their faſhion; I took the next row upon myſelf, which I executed with the precaution above deſcribed; and having made ſmall wagers between us, upon the event, both of us exerted ourſelves to the utmoſt. I need not tell the iſſue of the trials. The wager indeed never was exacted, it being chiefly deſigned as a ſpur and memorial, and was commonly paid by the winner. In the laſt inſtance, I remember particularly, the trial came out like ten to one, there being

being fifty hoodings down on their row, when mine had loſt but five. The reaſon is indeed obvious. When the ſtook has had time to ſit together, which it muſt have had, before the hoodings became ſo light, as to be eaſily blown off, the hold taken of them is ſo good, that they can only be raiſed from their ſeats by a wind that will tear up the whole end of the ſtook in which they are faſtened. And if after they were faſtened below, their crops alſo were ſomewhat united, and mingled with each other above, they would there likewiſe take ſuch hold through time, that they could only be torn from their ſeats, by ſuch a tempeſt as was able to overturn at once the whole ſtook from the bottom. And give me leave to obſerve, that this ſcarce ever happens, for the ſheaves are commonly blown off, one by one, or pair by pair. If it happens otherwiſe, it can only be in ſuch ſtooks as are leaning half over already; or ſuch as are much diſtorted from thoſe erroneous methods of ſtooking, which have been already mentioned (page 23.)

Further illuſtrations.

In caſe the foregoing ſecurity ſhould have been neglected, or ſhould actually fail from the abſolute violence of the wind, there is yet another method of preventing the effects of ſuch ſtorms, as are deſcribed above, (page 27) if one could catch the time rightly. This too I have practiſed ſucceſsfully, and can give the hiſtory of one inſtance from my laſt year's operations. I take the fact from thence, becauſe it is recent, and becauſe it may be remembered by a hundred people, that were occaſionally witneſſes of the whole tranſaction.

In harveſt 1771, I had a ſmall field of between two and three acres, cut and bound dry; ſo that it came to be ſtooked in good order; but on account of my abſence, the precaution of faſtening the hoodings as above, had been neglected. About a fortnight after, upon a Saturday morning, when

Another proviſion againſt a ſtorm of the above ſort, in a narrative.

when the field was near ready for the ſtack, it blew a hard gale from the ſouth. My harveſt people were of opinion, that if the wind continued without rain, in a little time it could be taken in, in good order. However fond I was of catching the occaſion, yet the ſouth wind being doubtful, and a blackneſs beginning to appear, I ordered them to the barn, which was in ſight of the field, that they might not be engaged in any work, which they could not leave at a minute's warning; and I bade them look out, now and then, to the field and weather. At ten o'clock the wind and blackneſs were increaſed, and danger was to be feared about noon. Then I told the ſervants, that I had given up thoughts of getting in the corn on that day; but was reſolved if poſſible to keep on the hoodings, and to ſecure every thing againſt Monday, if the weather then ſhould favour us. I aſſured them, that the rain would be on before one of the clock, againſt which time I was afraid the field would be in bad order to receive it, unleſs they exerted themſelves ſtrenuouſly. They either not foreſeeing the danger, or unwilling to leave the cover of the barn, in the approach of a viſible tempeſt, did not ſeem to enter frankly into my views; rather attempting to frame difficulties. After ſome reaſoning, I was obliged to tell them, in a ſtronger ſtile, (I remember the words) That the devil, the prince of the power of the air, was juſt going to throw down the whole field; and then, like a dog as he was, to lift his leg and piſs upon it; but I was reſolved to diſappoint him, through the help of heaven, and their aſſiſtance. This language ſtruck; and Will ſmiled at the thoughts of a battle, and promiſed to give me notice of the firſt hooding that fell. I retired a little. At eleven the wind preſſing moſt vehemently, I run out again; and finding one of the lads at the corner of the barn, looking at the field; we both together

Of the author's attention to its approaches.

together saw the first hooding fall. In five minutes we reached the field; but by that time, fifty or sixty stooks were uncovered, and some down altogether. We began however resolutely, three hands to the row of stooks, because four sheaves were to be set up together, and in some violent blasts they were to be held up, till four more were added. Then, and not till then, I found that the above-mentioned precaution, of fixing the hoodings properly, had been neglected. I now saw the reason of the total overthrow of the corn, and expressly ordered every hooding to be fixed on with care. I followed after the servants my self, picking up, and replacing firmly every sheaf that fell behind them. By the time we were half, or little more than half through the field, the servants despaired of the work, and would have given it up. Many hoodings had fallen behind them, all was flat before them, and the rain began to spit through the wind, now become a tempest. Secure myself of the effect, so far as we could go, and not yet without hopes of finishing the whole, I urged their perseverance with good humour, upon the old topic, of resisting the devil. They smiled, and went on vigorously; I still brought up the rear. In a word, the whole was finished about five or six minutes after the rain came on. We then left the field under a heavy rain, but perfectly well covered and secured: for though we often turned to look at it, we had no occasion to return to it; not a sheaf being down when we entered the barn, nor at any time after when we surveyed it, till it was taken down for carriage. Which is still more, not a sheaf was hurt by what fell upon it, either before, or after it was put up. The clear proof of our success was, that we had the whole field in a stack upon Monday, whilst scarce a carr or waggon in the parish, was yoked for several days thereafter; nor could have been in a fortnight, unless

His diligence in keeping up the corn, and on the hoodings.

His success.

unleſs the weather had been very good that week.

The uſe of the above hiſtorical narrative.

I have narrated this hiſtory minutely, for the ſake of the many things that may be learned from it. For *1ſt*, It ſhews the good effects of faſtening on the hoodings rightly, and the bad effects of careleſſneſs in this point. *2dly*, It ſhews the importance of a ſtrict attention to the weather, and a foreſight of the dangers ariſing from the ſudden changes of it. *3dly*, It ſhews how much a ſudden ſtorm, and the appearances of danger and difficulty from it, will rather ſtartle and confound the farmer, than rouſe him to proper thought, and a vigorous exertion. And what is ſtill of more importance, *4thly*, This hiſtory ſhews what a bold attempt, and reſolute perſeverance will ſometimes do, beyond all firſt conception or belief. The ſervants who on Saturday would not enter into the hurry going then on, againſt Monday's evening boaſted their ſucceſs; and upon Tueſday were triumphing over their neighbours, who had ſcarce as yet been able to touch a ſheaf. The people on the high way, and the villagers, who, overlooking the field, thought us mad, and came out of their back doors to ſee our diſtraction, as they called it, were equally amazed to ſee the waggon on the field upon Monday morning; and till the corn was almoſt wholly carried off it, could ſcarce comprehend the meaning of our Saturday's hurry.

I doubt not, but there may be many farmers through the country, who can tell ſimilar inſtances of their vigilance, equally ſurprizing in their ſucceſs and efficacy, with what is narrated above. Were ſuch tranſactions faithfully recorded, and minutely attended to, they could not fail of making impreſſions, where dry precept and argument might be forgotten. For which reaſon, I have often wiſhed, that ſome of your occaſional meetings were employed in hearing any well atteſted

teſted accounts of ſuch tranſactions; and that ſome ſmall part of your charity funds were allotted, as encouragements, to ſuch as had exerted their ingenuity, prudence, and activity ſucceſsfully, in their affairs of huſbandry. This might have a tendency to ſtir up others, to employ their thought and reflection upon their buſineſs; in the courſe of which, the difficulties and dangers of their way of life might occur to them, and the proper remedies be ſought out, and at hand as it were. Thus difficulties might be encountered with firmneſs and ſucceſs: And is not this better, than for a man to be ſtanding with folded arms, and a vacant face, gazing at them, and dreaming about them, till he is overwhelmed with them?

Of HUTTING CORNS.

The third method of ſetting up corns in order to preſerve them, is hutting. Though a wiſe man will prefer a well made ſtook, to every other way of preſerving or wining corn in the fields, yet hutting is ſometimes neceſſary, before particular kinds can be fitted for the barn, or yard. It is therefore uſed in light grounds, hot gravels, or thin ſoils near the rock; where the ſtraw is ſmall, and the bottoms of the ſheaves are full of weeds, or natural graſs.

A hut of corn is a ſmall clump or ſtack, reſembling a hay quoil or rick; and conſiſts of about forty, fifty, or more ſheaves, according to the nature and ſtate of the victual at the time. The deſign of it is to preſerve the corn upon the top of the ſheaf from future damage, after it is pretty well dried in the ſtook, or gayt ſheaf; and to expoſe to the air the wet and graſſy bottoms, that cannot be ſo well cured and win, while they ſtand upon the damp earth. It is therefore peculiarly neceſſary, to certain corns and ſoils; eſpecially in *A hut deſcribed.*

calm and dropping ſeaſons. From this general intention of hutting, it is eaſy to ſee, that the operation cannot be ſo well performed immediately after the corn is reaped, or when the crops of the ſheaves are wet. If this was done, unleſs the quantity put together was very ſmall, it would probably heat too much in the hut, and ſpoil both the colour and quality of the grain.

Further, from the ſize and figure of a hut, as well as the intention of it, it muſt alſo be obvious to a man of ſenſe, in what manner it ought to be built; and equally eaſy to him to detect any errors in the common practice, that may be committed through ignorance or inattention. But paſſing all obſervations upon an erroneous practice, we ſhall *1ſt*, in as few words as poſſible, give the moſt approved practice in common uſe. Then *2dly*, we ſhall give a ſmall improvement on it, which may be of advantage, in caſe a bad ſeaſon ſhould force the farmer to hut his corns before they are ſufficiently dried, or deadened for that operation.

The common way of hutting corn.

And firſt, of the moſt approved method of hutting, in common uſe. You will obſerve, that as huts are generally made of the ſtooks, or gayt ſheaves, which have ſtood ſome time, the farmer chuſes, from thoſe around him, a ſufficient number of dry ſheaves, of the cleaneſt and ſtrongeſt ſtraw, for the foundation of his hut. Theſe he ſets up like the ſtale of a ſtack, in a circular form, but not preſſing it too cloſs together; and about it he ſclates on ſome of a leſſer ſize, that do not reach the ground. His care is, by this ſecond courſe, to cover all round the open ſpaces in the ſtale below it. This brings the top of the work to its full breadth, and nearly to a level. Upon this again he begins another courſe, firſt by filling the heart well with his dry hoodings, and other ſheaves, choſen from the windy and drieſt end of his ſtooks; and then he takes the wetter and more graſſy bottomed ſheaves, to be ſclated upon the out-

outside as before. After these are put on properly, that is, by spreading their bottoms a little, and thereby covering, as directed above, all the open spaces between sheaf and sheaf in the course below them, he again sets up a few hoodings, or such like in the center, as many as he thinks necessary to contract the circle towards the top; and having chosen some of his greenest and wettest sheaves, he again slates them on, both around and above the other, till he brings the whole to a proper point, or top. Here he does not care how wet or green his sheaves be, because he trusts to their height, and outside situation, for their drying: and is not even displeased, that they have some more than ordinary weight in them, to resist the wind, that they may not so readily be blown off till the whole sits together a little, or can be sufficiently fastened together. For this last purpose, and as a further covering to the whole, the farmer looks about him for one of the largest and greenest sheaves in the field, for a top sheaf; and if he is not properly fitted with one, he tyes two sheaves together in one strap, pretty near the crop. This he fits on above all, spreading its bottom round the whole, and as far downward as it will reach. If the weather is windy, two thumb ropes of straw are put on across each other, round the neck of the top sheaf, and fastened below at each end. This finishes the hut, and will secure it against all weather for a considerable time. For by slating on all the outside sheaves, with their heads sufficiently raised, the rain that falls drains off, as from a thatched roof; and by spreading their bottoms rightly, so as to cover all vacant spaces between sheaf and sheaf, none of it gets admittance to the body of the hut.

In very bad weather, when the farmer cannot find a sufficient number of dry and deadened sheaves, for the stale of his huts, an ingenious neighbour begins his operations in the following

An improvement upon the common method.

manner. He chooſes ſheaves of the cleaneſt and ſtrongeſt ſtraw; and with theſe he ſets up two ſtooks, croſſing each other in the middle, and extending ſo far on all ſides, as he deſigns the wideneſs of his hut ſhould be. And having put them up in the beſt manner directed on the article of ſtooking, they give him four logies or funnels, pointed to four quarters of the heavens; ſo that blow the wind how it will, it paſſeth freely from ſide to ſide of the hut ſtale, and communicates its influence to the inſides of all the ſheaves in the croſs ſtooks. The quarters between their ends he fills up but ſlightly, by a ſingle large ſheaf or ſo; that the air having ſufficient room here alſo, may communicate its influence to the outſides of the croſs ſtook ſheaves. This is excellent. But it is eaſy to ſee, that ſuch a foundation will not bear a great quantity of ſtuff above it; neither does the condition in which we ſuppoſed it to be, admit of one's putting too much of it together. The farmer therefore obſerving the rules of hutting, above preſcribed, by ſetting his beſt dried hoodings and other ſheaves in the middle, and by ſlating on his wet and graſſy bottomed on the outſide of them, he quickly brings it to a top; which he finiſhes off as neat and cloſs as he can, to prevent the entry of rain into the heart of the hut. A hut put up in this faſhion, by an exact hand, while it preſerves the ſtuff from danger, will alſo win it, in half the time that would be required for a large quantity, put up in the common faſhion; and it will give it out in better condition, to the carrs and waggons, when it is to be carried off the field.

The ſecurity acquired by hutting corn.

But if corns are put up in tolerable good caſe either of the ways, they will ſtand a long time in ſafety, and with the common intervals of fair weather, or of windy weather though ſcarcely fair, they will improve conſiderably, and be got in at laſt in very good condition. The farmer

therefore

therefore acquires a kind of temporary eaſe, and ſecurity of mind, when his fields that require hutting are put up in good condition, and with a proper care and accuracy in the workmanſhip.

Upon the whole of what hath been ſaid, on this ſecond period of harveſt-work, it may be obſerved, that whether corns are gayted, ſtooked, or hutted, the farmer's ſecurity in all ſeaſons, depends *1ſt*, upon his having ſome knowledge of the beſt methods of performing his work, and his thinking a little of what he is about. *2dly*, Upon a ſufficient pains and accuracy in the execution of it. And if he begins with right methods, he ſhall ſoon acquire a facility and exactneſs in every manual operation. It will at laſt become a habit, or ſecond nature to him. To encourage him therefore, to take the neceſſary care and pains, I could aſſure him of his ſaving more than half of what is commonly loſt, or ſpoiled by a bad harveſt. For, in following the very cuſtoms that are in common uſe, even that is the difference, I may ſay, between a prudent and a thoughtleſs, an active and a ſlothful management. If the farmer thinks otherwiſe, and indulges himſelf in careleſſneſs, or diſſipation, he muſt content himſelf with being bankrupt, before half his tack is run; or if, by a fortunate ſituation, he ſees it out, he muſt reſolve to ſatisfy himſelf with being a great deal poorer at the end of it, than otherwiſe he might have been. I know what is commonly thought and ſaid by many of you, when your neighbour grows rich and you poor, or when he ſucceeds in any operation which miſgave in your hands. You never imagine him more ſkilful and careful than you; you don't blame yourſelves for ignorance or negligence: No. Theſe things ſeldom enter into your thoughts; you ſay, he is always lucky; every thing goes well with him: I am for ever unfortunate; nothing ſucceeds with me, deſign what I will. Both in your religious and

and worldly concerns, many of you think, or ſeem to think, that heaven has taken the whole of them upon itſelf; and appear as afraid of interfering with it. So much do you depend, or ſeem to depend on its grace, that you ſcarce attempt to do what it expects and requires of you. Theſe are often the pretences and excuſes of ſloth. For, though the race is not always to the ſwift, nor the battle to the ſtrong; neither bread always to the wiſe, nor favour to men of underſtanding: yet in the general courſe of things, a good fortune, or rather, the grace and providence of heaven, commonly attend the footſteps of wiſdom and induſtry.

The management of peaſe and beans.

With reſpect to the *peaſe* and *bean* crops, they are ſeldom covered; nor can they be well employed, in ſtook or hut, as coverings to themſelves. And therefore, if coverings are to be put upon them, it would be beſt to protect them with oat ſheaves, or thatch ſtraw. The common practice however is, after they are bound, to ſet them up in the way of ſtook, ſix or eight ſheaves together, without any covering at all. If this naked method is approved, it would appear to me better to put only four ſheaves together; then, all of them would be alike expoſed to the air and drought; and all alike ready, when they were to be carried off the field. If one would wiſh to have them covered when they are near dry, then ten or twelve ſheaves may be ſet together in the way of ſtook, and covered with four or five riders and hoodings of green corn if at hand. But, unleſs the peaſe or beans be full of graſs and weeds, I ſhould not be fond of moving them from their ſeats, nor even of laying them down, till the day, or the day before, I hoped to take them home. The reaſon is, that, after they have ſtood long under alternate rain and drought, the leaſt motion makes them open their pods, and ſhakes out their grain. The practice however, of laying down

corns

corns of all kinds, to air their bottoms before they are carried in, is generally useful, and sometimes necessary; especially when they have stood long upon a wettish soil, and under wet weather. But our rules and observations upon the management of this part of the harvest-work, we refer to the next period of it.

The third period of harvest-work.

The third period of harvest-work comprehends every operation that may be necessary, from the time that the corns appear to be ready for ingathering, till the whole is finished, and the victual, put into the barn or barn-yard, is brought into a state of perfect soundness for use, and of perfect safety for preservation.

Here then let me observe, that notwithstanding the best intentions of the farmer, to have his corns in good condition for being carried off the field, —to put them into stack or barn in good keeping order,—and to secure them effectually against all future dangers; notwithstanding he has used his utmost care and diligence, to answer his good intentions in all these particulars; yet by some change of weather, some hurry in his operations, some inattention or neglect, soon or late, errors are committed, and necessaries unprovided, so that the honest man suffers in one or other particular, and meets an unexpected disappointment. Therefore, that we may overlook nothing material to his security, which he himself may forget, we shall divide the business of ingathering, and securing his crops, into the following heads.

The division of the subject belonging to it.

1*st*, Of the operations immediately preparatory for leading corns.

2*dly*, Of the operations preparatory for stacking and mowing corns.

3*dly*, Of the methods of building, covering, and roping stacks; and the provisions necessary for these operations.

4*thly*, Of the means used for recovering heated corns,

corns, either in mow or ſtack; and the proviſion that may be made for rendering this an eaſy work.

In all theſe we proceed upon the ſuppoſition of unfavourable weather; and at the ſame time, that ſome room is leſt for human prudence and activity. And we ſhall be as particular on the whole, as is neceſſary to be underſtood and believed by any farmer of common thought and reflection.

Of the operations preparatory to ingathering.

1*ſt*, Of the operations immediately preparatory for leading corns.

In entering upon this point, it is neceſſary to obſerve, that the farmer ought never to begin his leading upon mere conjecture that his corn is ready. He himſelf ſhould examine it, in all its different parts and poſitions. It was not perhaps all cut in one day, nor in the ſame condition of dryneſs or ripeneſs; nor laſtly, was it all alike expoſed to the influence of the drought. He ſhould therefore examine it ſtrictly with his own hands and eyes, leſt after he has diſengaged his ſervants from other occupations, and yoked his cattle, he be diſconcerted, and obliged either to proceed with danger, or to leave off with ſhame and loſs of time. It were better this trial were made the day before, than on the day of ingathering; that he may have time to be well concerted, or even to remedy what he may find amiſs. On this occaſion, a few of the worſt ſheaves may be marked where they ſtand, and a few others laid out to dry; that by inſpecting ſuch at ſome hours diſtance, he may be able to judge of the whole field at preſent; and even to underſtand what time it might require, to mend the worſt of it. And if he viſited the field in the ſame evening, or in the morning of the next day, with the ſame care, he could not fail of being concerted and prepared for the beſt.

Viſiting and examining the corns.

If, upon his firſt trial, the farmer finds his corns in good order, and the ground itſelf perfectly dry beneath his ſtooks; he has no more to do, but

order

order his men and horſes to be got ready, at an appointed time, that his work may go on briſkly.

If he finds no faults, but a little dampneſs in the bottoms, ariſing from their long ſtanding upon a wettiſh ſoil; and that the whole might be better of an hour's drought, all hands may be called together, in order to lay it out, that no time may be loſt. In this operation, the hoodings are firſt pulled off, and ſet at the end of the ſtook, not directly in the wind; then the operator takes hold, with both his hands, of the crops of the eight ſtanding ſheaves, and pulling them towards himſelf, he wheels them about to the ſun or wind in one piece, as he lays the whole down upon its ſide. If the two ſides of the ſtook are unequally dried—For example, if the winds have blown for two or three days from one quarter, or the ſouth ſide has enjoyed a warm ſun, or the dew is yet hanging on the north ſide; in that caſe, it is beſt to turn the damp ſide uppermoſt: for which purpoſe nothing more is requiſite, but that the operator ſtand upon the drieſt ſide, while he pulls the ſtook towards him, and wheels its bottoms to the ſun or wind: for in laying the whole down, the drieſt ſide will be always lowermoſt, the wetteſt ſide always uppermoſt. And it might not be amiſs, before he parts with it, if he drew his hand acroſs the bottoms, to open the pens of the ſtraw a little; or if he turned a parcel of every wet ſheaf inward, in order to the admiſſion of the air or ſun beams. If this be all that is requiſite, and the operation be performed in a good morning, then, by the time breakfaſt is over, and the cattle yoked, the work may begin, upon that ſide of the field which was firſt laid down. The judgment of the farmer however muſt be conſulted upon every point; for no language can make rules ſo accurate and preciſe, as to hit the various degrees of wet or dry, green or win, that may be in a field.

Of laying down ſtooks to air their bottoms.

Which ſide to lay uppermoſt.

If laſt of all, the ſtate of the corn, is ſo bad as to require more handling, and a longer time before it is carried off, then the moſt clear and certain method is, to wale and ſort the whole field, ſheaf by ſheaf. This, if done with diſtinctneſs and care, leaves nothing afterwards under any degree of doubtfulneſs, to cauſe delay, or a repetition of labour. In this operation, the dry hood ſheaves, and all others in good condition, ſhould be laid on that ſide of the ridge along which the waggon comes, turning any part of the ſheaf to the wind, that requires a little drought. All the ſheaves in bad condition, ſhould be laid or ſet out upon the oppoſite ſide; but with much more care and attention. This diſtinct ſituation of good and bad ſheaves, ſhould be invariably obſerved over the whole field, by all the labourers employed in ſorting it. A few experienced hands ſhould be ſet to this work: they will be able to know a good ſheaf by its comparative lightneſs, and looſeneſs in the ſtrap; and a bad ſheaf by its weight, and the tightneſs of its binding. A doubtful one muſt be tried, by thruſting one's hand into the middle of it, or his finger beneath the binder's knot. What is found in very bad condition, ſhould have its worſt ſide laid carefully out to the drought; its bottom ſhould be tiezed up, or if need be, the band ſhould be looſed, and the ſheaf ſpread out at full breadth, or in any other way expoſed, that will beſt amend its faults. All the while, particular care ſhould be taken of both knots of the ſtrap, that they be opened and effectually dried; otherwiſe it would be more profitable to throw it aſide, and to make a new one.

Of waling and ſorting corn in bad order.

It is eaſy to ſee that, after the above ſorting, the waggons may go over the whole field, and carry off but half of its contents. There is however no time loſt by that circumſtance; for, before the whole of the dry corn is taken away, that which was laid out to dry on the other ſide of the ridge, may

The waling repeated.

may be either wholly ready for carrying, or ſo great a part of it may be ready, that it can be again ſeparated from the bad, by the ſame hands employed in the firſt ſorting; and the bad itſelf may be ſo managed, as to have thoſe parts, which had hitherto eſcaped the drought, anew expoſed to it. In this ſecond ſorting it would be wiſe, in my opinion, and I have already hinted it, rather to throw aſide a growing ſtrap or handful, and to bind up the ſound by itſelf for carriage, than, for the ſake of what would not amount to a dozen ſheaves, to expoſe ſome hundreds of a field to unneceſſary danger or delay. Nay, 'tis better for the whole, the earlier this ſeparation can be made; for it prevents all future trouble, or delay in ſecuring the beſt; and the worſt itſelf, laid out in ſmall parcels, would ſoon dry; and might, as was formerly hinted, be gathered at leiſure. Thus, with the addition of a few hands, the ſame field can be finiſhed in the ſame time it would have required, had the weather been all along good, and the corns in the beſt poſſible condition for carrying in.

The ſame pains may be uſed, when neceſſary, to ſeparate the good and bad of gayted corn, or of corn in huts. Indeed it is convenient to load a waggon from the huts themſelves, and if the corn is generally in good condition, as one might expect it would be, after it had been already ſorted, in the building of the huts, perhaps the waggoner and forker together may be truſted, without more ado about the matter. For it is perfectly eaſy to them, with the leaſt attention, to throw aſide a bad ſheaf that comes through both their hands. This then ſhould be enjoined them, and even to the ſtack builder, ſince all labourers need from time to time, to have their attention rouſed to any thing expected from them, which is not their immediate work. Indeed, if much of this by-work is to be done, better a ſeparate hand were

employed, than to run the risk of their neglecting either of their proper employments, in minding other matters.

A caution not to lay down much in doubtful weather.

Having now discussed the several points, relating to the work in the field, I cannot, at present, recollect any thing material omitted, but one advice, which is never to spread out much corn at once, unless pretty sure of the weather. To be overtaken with rain, in this state of the field when every part is almost ready, must be highly distressing to the careful farmer. I should therefore take occasion here, from these and the like accidents, to recommend to him a careful study, and observation of the weather; treasuring up every judicious hint upon this subject that he hears from others, as well as what may have occured to himself. The shepherd of Banbury's observations have been printed, and are much talked of. To me indeed they appear to have been made upon a plain, or nearly so; for he takes no notice of the signs upon high hills, commonly marked by all who have them within view. Besides some of his observations do not strike. Perhaps indeed I have not been sufficiently attentive to these matters; perhaps too, the observations being made in an inland or plain country, his signs may not exactly correspond with those observed on a sea coast, or among a cluster of hills. Some of his observations are however striking; and if any one is curious to compare them with his own experience and observation, he may find an abstract of them printed (before the calendar) in the Edinburgh almanack, for the year 1773. If farmers are acquainted with the ordinary signs of good or bad weather, in the places where they live, a weather-glass might be useful to them; but not without a strict attention to it; daily marking its risings and fallings, observing their progress, and even their indications of continuing, upon the top of the mercury, according to the directions given

The study of the weather recommended.

along

along with it. Be wary however of truſting to the barometer alone. But if the ſigns of the weather without, correſpond with the indications of it upon the weatherglaſs, one may more ſecurely truſt to it.

I now leave the fields, and muſt lead you from thence to the barn and barn-yard. There we ſhall employ a little more of your time and leiſure, if you can beſtow it this way.

The ſecond point. Of the operations preparatory for ſtacking corns.

This was our ſecond point, upon the third period of harveſt-work. And here, keeping a weſtern climate, or a bad ſeaſon, ſtill in our eye, we cannot but commend the uſages of the weſt, particularly, in building large barns and ſmall ſtacks.

Large barns and ſmall ſtacks convenient.

A large barn is of great advantage in variable weather. One, for example, may throw into his barn two or three waggon loads, when he dares not ſet the ſtale of a ſtack, however ſmall. Little ſtacks are equally convenient, for one of ten bolls may be begun and finiſhed, when one of thirty or forty muſt not be undertaken. Beſides, the advantage of a ſmall ſize is viſible, when one cannot truſt to the good condition of his corn. In ſuch ſtacks, the external air penetrates to their very centers, or very near them. The heat of them therefore can never be very great, nor widely extended. If it ſhews itſelf at all, it can only be when the ſtack through time ſubſides, and ſhuts its pores, ſo to ſpeak. This commonly happening very late, may ſurpriſe the farmer, perhaps, after he thought all danger was over; but it is its only inconvenience: for a ſheaf or two pulled out to the leeward, in order to let out the ſteam, will cure it as ſoon as it is perceived. And if he pleaſes, one or two pulled out to the windward will aſſiſt its flight, and ſupply its room with cool air. If the farmer finds it needful, he can multiply ſuch air paſſages, at different heights, and in different directions, at pleaſure; and that without any inconvenience, if he only takes care, that the

The advantage of ſmall ſtacks.

Eaſily cured of heating.

the balance of the ſtack be not deſtroyed, by pulling out too much on one ſide, in the very great hurry of mending it. If the weight above tends to fill up the air holes, a few branches thruſt into them will keep them open, till all danger is over.

Of funnels in large ſtacks.

If the ſmallneſs of the barn-yard obliges the farmer, or his own conceit inclines him, to have large ſtacks, writers on huſbandry recommend a funnel, drawn up in the center of the ſtack, from the bottom to whatever height is moſt convenient. This is made in England, by ſetting a ſack full of chaff in the middle of the ſtale, and building round it; as the ſtack advances, the ſack is drawn upwards, from time to time, till the funnel is high enough; and then the ſack may be pulled out, and the hole above drawn to a point, or covered. The heated air, ſay they, finds its way upward by this conveyance, and ſo flies out at the top. It would however be an improvement of this convenience, were the air from without admitted into it, from time to time. This might eaſily be done by a level pipe, reaching from the outſide of the ſtack upon the windward ſide, to the center funnel, or near to the ſame. And the pipe may be laid upon the ground, or even two or three foot above the ground, if that height is neceſſary to catch the wind.

An improvement on them.

Of ſtone pillars and covers.

Others recommend well hewed ſtone pillars and covers, clad above with ſmall timber and bruſhwood, on which the corn is laid. Theſe foundations have ſeveral advantages; the corns are lifted up into the air, out of the reach of dampneſs from the earth; the wind blows through beneath them, as well as round them, with good effect: and laſtly, if they are rightly made, and the pillars three feet above the ground, no rats nor mice can get into the ſtack. This laſt advantage is the chief deſign of ſuch pillars; and indeed it is a great ſaving, in ſome years, and in ſome particular ſituations. In the mean time, care muſt be taken,

Their advantages.

to

to leave no ſtraw beneath the ſtacks that are built upon them, no poles nor ladders leaning to them; by which ſuch vermine may get up or down, otherwiſe all the expence and labour, ſo far as regards them, is wholly loſt. The expence of them is indeed great for a poor farmer, who hath not much to ſpare, after his rent is payed. A circular one, that could hold from forty to ſixty bolls, coſts in ſtone, hewing, &c. about ſix pounds. One I have, that holds from ſixteen to twentyfour bolls, coſt me in ſtone work above three pounds, beſides half a guinea for the ſmall timber and bruſh-wood. Yet I would not have wanted its convenience, not to ſay its beauty, theſe few years paſt, for more than the money. But however elegant and uſeful they may be, let us rather conſider them here as a kind of ornament to the barn-yard of a gentleman farmer, than as conveniences for his poor tenants, that cannot ſpare the expence. And let us recomend to them a cheaper, and at the ſame time an equally uſeful plan. A plan which, while it anſwers every purpoſe of the other, ſhall ſcarce coſt ſo many ſhillings as it does pounds. It was contrived and executed by a farmer, Thomas Orr in Ernock, who has experienced its advantages for ſome years paſt.

A cheaper plan equally uſeful.

This farmer has his ſtack-yard upon a little riſing ground, in reſpect of the neighbouring fields. He began by cutting a ſmall trench from the outſide of his yard dyke, to the place where the center of his ſtack was deſigned to be. This trench, ſtraight in the bottom, and as near the level as the riſe allowed him, was about eighteen inches or two feet wide. He lined it on both ſides with common field ſtones; over which he laid a covering of flagg ſtones, leaving a vent hole open under the center of his ſtack, to let up the wind into it. This vent-hole, like the reſt of his pipe, might be about nine inches wide. And having dreſſed down the earth, that was thrown out of his

A deſcription of it.

his trench, over the flagg coverings, and into any hollow places around him, his work was done for the time. Againſt the harveſt ſeaſon Thomas gathered a good bundle of ſmall ſticks, or rods, which he laid up to dry, and be ready for uſe. When he begins to build his ſtack, he ſets up his bundle of rods over the center vent-hole, ſpreading them a little below, that they may ſtand firm; and tying them looſely above, by a withy, or thumb rope of ſtraw. Around this bundle, he builds his ſtack to what circumference he pleaſes; and at laſt above it, to what height he pleaſes. And when it is finiſhed, he is at eaſe with reſpect to ſo much.

Its advantages.

By this trifling expence, ſcarce above two days labour of his own hands, does this ingenious man ſecure his corns in the yard againſt all poſſible danger. For his logie from the outſide draws the air ſo ſtrongly, if the wind is near that quarter, that he fears no danger from heating in the ſtacks. Nor 2*dly*, does he run half the hazard in the fields, that his neighbours do, by keeping out their corns a long time to win them; for he dares to put in his, if cut dry, much ſooner than they can with ſafety venture theirs. And laſtly, which is ſtill more notable, he makes uſe of his logie and funnel pipe, for the capital purpoſe of the pillared ſteddings above deſcribed. For if he ſuſpects that any of his ſtacks are infeſted with mice, he diſlodges and deſtroys them in an hour, or ſo, at almoſt no expence at all. Whenever he finds that the wind anſwers him, he carries out a ſhovel full of hot cinders, and having placed them in the logie, or mouth of his funnel, he only ſtrows upon them a little bruiſed brimſtone. This in a little time, begins to ſhew its effects throughout the whole ſtack; ſo that, by applying his ear to any ſide of it, he can hear within a ruſtling noiſe, attended with a cheeping cry, which ſhew the whole mice to be in motion, and, at the ſame time,

time, in diſtreſs from the very air they breathe. After this they begin to ſet out their heads for a gulp of freſh air; and may now be ſeen by an attentive eye. Thomas goes round with the grey plaid about him, and contemplates the effects of his own ingenuity, with peculiar pleaſure; for he expects them, and looks for them. At laſt the mice being no longer able to endure the ſtench within purſuing them, are forced to deſert their winter habitations; and ſo drop down in their preſent ſickly and feeble ſtate, an eaſy prey to the dog and cat, who are both of them taught to watch and deſtroy them, on ſuch occaſions.

All this is moſt natural, and when told with ſimplicity by the man himſelf, can ſcarce admit a doubt. Thomas adds further, that this ſcheme is much more effectual to all his purpoſes, in a pretty large and cloſs built ſtack, than in a very ſmall and looſe built one: becauſe, when the ſtack is of little compaſs, and not preſſed ſufficiently together by its weight, the air finds more eaſily and readily, ſome vent for itſelf near the bottom, through which it eſcapes, without paſſing thro' the whole ſtuff, and ſo producing all its deſigned effects. Whereas, in a greater and more compact body of corn, the air is obliged to find its way through every ſmall ſpace between the ſtraws, before it can get out. This too is abundantly natural and obvious. Inſtead then of doubting the facts, as ſome at a diſtance may incline to do, or of deſpiſing the efforts of genius, as ſome neighbours may do, who cannot doubt the facts, we ought all to be ready to make a fair trial, before we decide againſt the meaſure: and the rather that, while our own intereſt is at ſtake, the experiment can coſt us nothing.

Moſt uſeful in large and cloſs built ſtacks.

Some will perhaps object, that their barn-yards are not convenient for ſuch experiments. For example, they may think them not ſufficiently raiſed, not expoſed to the weſt wind, which is the

Objections from ſituation anſwered.

trade wind of this country; or that they are too clofs on all hands, to receive any benefit from fuch trials. But none of thefe difficulties appear to me infurmountable. Suppofe the barn-yard were not above the level of the neighbouring grounds, the air pipe might be built, if of ftone, above the furface itfelf; or a rhone of wood could be made for the purpofe, communicating with the center; and it might be either laid on the ground, or two feet above it among the ftuff, in order to catch the wind the better. If the ftack-yard declines to the north, or eaft, a trench caft in any of thefe directions, would certainly anfwer the purpofe, nearly as well as one to the weft or fouth. For if the wind is not fo violent in fuch directions, it is generally harder, and more drying in its nature. Laft of all, if the barn-yard is too clofs fenced, it muft, at any rate, be very bad for the purpofe of keeping victual; therefore it fhould be laid more open: and the fituation muft indeed have been at firft ill chofen, if it does not afford a proper opening on fome fide. But not to ftay on fuch particulars, a willing mind will conquer the difficulties of any fituation whatever.

The principles further applied.

The fame principles and works will apply to a barn-mow, as to a ftack in the yard; and will doubtlefs have the fame effect. A little paffage might eafily be made through the foundation for the back mow, at the time of building; the fore mow may be fupplied with air from the open fpace between the doors, by a fmall wooden rhone placed on the floor, or at what heighth above it may feem neceffary: or, laft of all, either of thefe may be fupplied, by placing a triangular rhone in the three cornered windows, commonly made in country barns. If the air is conveyed by thefe, three or four feet within the body of the mow, it will anfwer the purpofe, when the mow is rightly built, or has any opening for the air to afcend by. A friend of mine has contrived fome-

what

what of this kind; but he carries his rhone, or conveyance, acroſs the barn, from window to window, with openings to let out the air in its paſſage. My opinion was, that he would be better to have no communication from air hole to air hole, for thus the wind was apt to paſs through too rapidly for any great effect; but if he meant to force it up through the whole maſs of ſtuff, it would be better for him to cut out five or ſix feet from the middle of his rhone, that the piece at each ſide might terminate in the ſolid mow, or near any ſmall vent upwards. Then, on whatever ſide the wind blew, it would be forced to aſcend, and to find its way through ſome part of the maſs. The piece cut out might be better employed elſewhere.

Air holes in barn walls examined.

Air holes in barn walls are certainly uſeful in ſome meaſure, without any additional improvement. But as they ſtand at preſent, their uſe is very ſmall; for when the mow begins to ſubſide, as all mows do through time, it naturally cloſes up its own pores and interſtices, ſo that little air can be admitted to the center, where it begins to heat, and needs it moſt. Add to this, the more damp the corn is, and the greater its danger of heating, the weightier is it, and the readier to ſink and clap together, which muſt in courſe haſten and increaſe its diſeaſe. Laſt of all, the very ſinking and contraction of the mow looſens it in ſome meaſure from the walls, leaving a ſmall ſpace between them and the corn, into which the air, admitted by the barn windows, enters; and round which it circulates, without penetrating the corn itſelf. From all which views of the caſe, air holes, as they ſtand at preſent, are not ſo uſeful as they might be made.

Not ſo uſeful as might be thought.

Improved real uſe.

But if the air admitted by them was conveyed, by means of a wooden rhone, or a little bruſh-wood, two, three, or four feet, within the body of the mow, where the real danger is,

it might do the moſt effectual ſervice to heating, or already heated corn.

There is nothing to hinder theſe four or five feet rhones, to be laid in ſtacks of any ſize, at the building of them, on different ſides, and at different heights, and to what number, and indeed of what greater lengths the farmer ſees needful. If ſuch implements of huſbandry were in common uſe, and prepared for the purpoſe, I ſhould not be ſurprized to hear the ſtack-builder calling for them, when he was laying on a waggon-load of his greeneſt or dampeſt corn. Their obvious advantages would ſoon recommend them to every body.

The expence little or nothing.

Obſerve, that one homeward grown fir-tree, from a ſhilling to eighteen pence price, ſawed into boards an inch thick, and cut into proper lengths and breadths, would ſerve all the purpoſes of an ordinary barn and yard. They might be three cornered in their form, and ſcarce above three or four inches in their ſides. And what is the expence in compariſon with the riſk yearly run, and the damage often ſuſtained, in both barn and yard? Nay, what is it in compariſon of the toil and anxiety, occaſioned by ſuch accidents?

The way of managing rhones and air pipes to the beſt advantage.

Further, my opinion concerning the management of theſe rhones, and of all other air pipes or funnels, is this, that they ſhould be ſhut up for eight or ten days, and perhaps more, after the ſtack or mow is built, till the heat begins to ſhew itſelf on the end of the hand-ſtaves, for heat itſelf, when kept in due bounds, is an excellent drier. When the heat begins to be felt by drawing out one of the hand-ſtaves, and we may judge from thence, that the air within is beginning to rarify and expand itſelf; then is the critical time of opening the holes, and admitting the cold air into the mow or ſtack: for at that time the vacuum, ſo to ſpeak, occaſioned by rarifaction and ſudden condenſation, will attract and draw the freſh

Heat rarifies the air.

freſh air, like a well going chimney, over a well kindled fire. This freſh recruit of air again, mixing with the moiſt and warm vapour within, will in time alſo be expanded and rarified; and ſo carrying the vapour along with it, will eſcape through every pore and interſtice of the ſtuff, into the open air, till nothing is left behind but cool air. And if the ſtack, or mow, was in very bad condition, by being ſuffered to heat too much, the ſteam, as is common in ſuch caſes, will be even viſible to the eye as it flies off. This is the philoſophical account, which I gave to Thomas Orr and others, of the effect. The language may be ſtrange to common farmers; but the reaſoning is juſt, and experience will incline ſuch reaſonable minds as have attended to the effect, to believe it will hold, though the language in which it is expreſſed, may not be ſo familiar to them, or the properties of air be not underſtood. If the farmer makes the trial, I could wiſh he would ſuffer the heat to be ſenſibly felt before his trial, that he may be convinced of the change that muſt happen. On the other hand, I hope he will not ſuffer the heat to increaſe too much, or to continue too long, before he opens his vent-holes, and gives his corns the neceſſary refreſhment. And this is all the caution needed upon the point.

Condenſed by the admiſſion of cold air produces a vacuum into which the air ruſhes violently.

If any of thoſe methods for preſerving victual were tried, and the farmer were well provided with every thing neceſſary before-hand, that the trial might be thoroughly made; I am convinced, that much of the corns, which in bad harveſts are loſt, or ſpoiled, might be preſerved perfectly ſound, for the uſe of man or beaſt. If this were the caſe, the farmer could never be in hazard of loſing his next years crop, by ſowing ſeed too much browned at the ends by mow-burning. A calamity that is but too often, and ſeverely felt by the careleſs ſluggard; while, from the ſame circumſtance, the prudent farmer is ſometimes obliged to renew his

Mow-burnt corn a bad ſeed.

his ſeed, when there is otherwiſe no immediate call for that expence or trouble.

I have ſaid nothing here, as yet, of building ſtacks or mows, for their preſervation from heating. If no air funnel is carried up the middle of either, it would be certainly neceſſary to ſet a great deal of the corn upon one end, in the place of ſuch funnels; that is, ſetting the ſtale a new, above the ground ſtale, and ſo on, another above that, till the ſtack or mow is brought near the top. What is further neceſſary in order to preſerve ſtacks from wet weather, will be mentioned on the next particular of this period.

The third branch on the third period of harveſt-work.

The third branch of this laſt period of harveſt-work, relates to the covering of ſtacks properly, in order to preſerve them from external injury, and to the proviſion neceſſary for that purpoſe.

Little needs to be ſaid to our weſt country farmers, upon the method of covering and roping ſtacks. Their own method, in both, ſeems to be commendable. Their miſmanagement is chiefly obſervable, in their being often unprovided with the materials requiſite for theſe operations, when they come to be needed; and, perhaps, in their want of care in building their ſtacks, ſo as to defend them effectually till their covering is prepared. Something therefore ought to be ſaid to them upon theſe points; and after that, a few words ſhould ſerve with regard to the operations of covering and roping ſtacks.

The want of thatch ſtraw highly inconvenient.

Now, there is nothing, I imagine, that ought to be more ſtudied by the weſt country farmer, than to have by him at harveſt time, a good ſtock of old ſtraw; drawn, and ready for thatching his ſtacks, as ſoon as they are built. His ryegraſs, if he has any, comes early, yet affords him nothing to cover itſelf. His bog hay may ſpare him a few ſpritts and ruſhes for itſelf; and that is, perhaps, all that it will do; ſo that, if he can ſpare nothing here, the ryegraſs muſt ſtand uncovered till it is black,

black, and perhaps rotten half a foot deep above the eaſing: for the end of our ſummers, and the beginning of our harveſt quarters, are our wetteſt times round the whole year. And as there is no poſſibility of our being provided, but from the ſpritts and ruſhes above-mentioned, againſt the harveſt itſelf; if there are no ſavings in theſe, every thing then put up muſt lie at the mercy of the weather, till it is provided by threſhing part of the crop itſelf: from this very circumſtance, I have ſeen peaſe ſtacks in the utmoſt danger of being wholly ſpoiled, by great rains.

Sometimes hurtful in the beſt ſeaſons.

But to ſpeak preciſely to this point; it is not in a variable harveſt that the improvident farmer ſuffers moſt by want of thatch-ſtraw. This can only be felt in the very beginning of ſuch a ſeaſon; for bad weather gives the ſervants too much leiſure to provide whatever may be neceſſary. The want of thatch is commonly moſt hurtful in the very beſt harveſts. Then it is, that the farmer is hurried on with his work without; and truſting to the excellence of the weather, the preparation of thatch is delayed till all is gathered in, and all needing covering. If the farmer is not overtaken before that, he has reaſon to expect that it cannot be long after it; yet the long continuance of good weather tends to increaſe his preſumption and ſecurity, and it is ten to one that he ſhall ſuffer at laſt: if he does, it muſt be moſt ſeverely. In paſſing a barn-yard, ſometime about the end of October, in company with two country men, we obſerved a dozen good ſtacks all unthatched, and all as green as a field in braird. We at firſt blamed the farmer's negligence; and one of the countrymen, to aggravate his fault, obſerved, that he had no excuſe, for we had not for many years enjoyed ſo good a harveſt. The other, as I then thought, very judiciouſly checked him; alledging that the goodneſs of the harveſt weather might be the ſole cauſe of the man's neglect.

At Nethermains in Cuningham.

glect. Upon reflection, the apology seemed to be just, as well as kind: for the fact was, that most of the corns had that year ripened together, and the fine weather continuing, every man was hurried in cutting down and gathering in. At the conclusion of the work a deluge of rain fell out, and the weather continued wet for several weeks. This farmer, indeed, like many others, was at last drove into his barn to provide his thatch; but, alas! he was also confined to it, till the growing took place; which hurt him much, as it did many others that year, who had been equally unprovident with himself.

A caution.

Circumstances of this kind occurring should alarm the farmer, and guard him against an overgreat confidence in the finest weather. It is a good maxim, long foul, long fair; long fair, long foul. At the same time, what is more directly to our point, all farmers, from such occasional surprises, should be taught foresight and diligence, in preserving, or providing the necessary covering for their victual, when it can be got in safe.

The easiest provision for thatching, viz. barley-straw.

Could not the farmer set apart all the straw of late threshed barley, for thatching next year's stacks? Perhaps it may be shortened a little; but no matter, it can be put on the cloffer: for it will do, as we in the west seldom keep stacks over summer. We keep indeed too many cattle, which are partly starved from want of both grass and fodder. This custom however makes us put a value on every straw. My advice is, therefore, adapted to our taste and custom: for the straw of seed bear comes generally after foddering time; besides we esteem it of little use for cattle, when threshed earlier. For which reason, I am not even scrupulous of setting apart for the ensuing harvest, some of my earliest threshed barley-straw. For if I were not provided against the time of need, I should think myself affronted if I had left a rush-bush, or broom-know uncut, in all my possession.

ſeſſion. It is true, ſuch as have large farms in the weſt are ſeldom unprovided; and in the eaſt, where they have corns of all kinds to threſh through ſummer, they ſcarce ever can be in want of thatch at harveſt time. And what, I pray, would the eaſt country farmers ſay of our practice, did they know that few of thoſe in the weſt, have a ſingle ſheaf of laſt crop remaining, to put upon their ſtacks of the preſent crop; but that it muſt be threſhed out of itſelf, before the crop can be covered from the weather. Might they not aſk us, with all our oeconomy, What could be the difference, in providing our thatch from laſt crop, or from the preſent, ſince ſooner or later every crop muſt furniſh the quantity required for a year? might they not twit us with the old proverb, That ſince we will be ſaving, it is ſtill better to hain the braird than the bottom: for without knowing what a bad winter may require of us, we dip very deeply in that winter's proviſion, for the ſtraw that in harveſt is abſolutely neceſſary to ſecure the crop.

The folly of not keeping it.

But in regard that, after all that can be ſaid upon the advantages of a proper foreſight and providence, with reſpect to our probable wants, many will be more or leſs unprovided when the demand comes upon them; our firſt rule here is, that great care be taken in the building of ſtacks, eſpecially above the eaſing, in order to keep out the rain till the thatch can be provided. This is done, as was hinted upon hutting, firſt, by filling the heart well, and thereby ſloping the outer ſheaves, ſo as to drain off the wetneſs readily. This is an eaſy work above the ring-gang, where it is moſt needful. Below that it is more difficult, eſpecially if the ſtack is allowed to grow much. Here the ſheaves on the outſide ſlide out, and both diſfigure the building, and endanger its falling without ſupporters. But a tight rope round the ſtack, and an active hand below, to beat in a ſheaf as

Care in building ſtacks neceſſary on account of the want of thatch.

The firſt rule.

soon as it slides out of its place, is the effectual remedy.

Of interruptions in building the stacks.

It may be necessary to observe here what will sometimes happen, to wit, that the building of a stack may be interrupted with rain, before it is half finished; which is not only dangerous to the corn laid out upon the field for compleating it, but particularly so to the unfinished stack. We pass over at this time the danger in the field, as not to our present purpose; and only take notice, that the common preservation used for a stack in this condition is, to fill up the heart as quickly as can be, with whatever corn is at hand, or on the way homewards. After this, the workman gives the whole a close covering of thatch sheaves, to keep out the rain. But as this kind of covering is not always ready on such occasions; so, at the same time, when it is used, it is but an insufficient protection under great and continuing rains. It were therefore to be wished, that we had in use both a better and more constant security.

Dutch barns hinted as a remedy.

I have heard that the farmers in Holland use a kind of timber roof, of a conic figure, for the heads of their stacks; which, being hung by the top upon a triangle, can, by the means of pulleys, be drawn up, or let down at pleasure; as the weather may either favour, or obstruct their work. Our countrymen who have seen them, call them Dutch barns: for the farmer can build up beneath them, any small quantity of his corn which he finds ready at the time, and letting down his roof upon it, he can wait with patience till more of it can be got in. And this work he can repeat from time to time, till the stack is compleated, and the roof fixed down upon it for good.

The author not fully informed of their nature and use.

This is the only account of those timber roofs, which I can at present recollect; it being a long time since I heard of them. And as I never saw one, nor do I remember to have seen any description of them, in the books upon husbandry, I dare scarce

venture

venture to be more particular myſelf, leſt I ſhould miſtake my own late conjectures, for the informations of my friend. Neither, for the ſame reaſons, can I judge preciſely of their advantages or diſadvantages. One however may preſume, that thoſe who uſe them find ſome benefit from them. But whether the advantages of them are ſuperior, or rather additional, to what we enjoy from our own barns; or if they are only ſupplemental, in making up for the want of ſuch barns as we have, I cannot at preſent pretend to determine. In the mean time, the difference between theſe two circumſtances is important. I ſhould therefore think, that the public would be indebted to any man better informed, for an accurate account of their conſtruction and advantages.

Wiſhes for a more full information.

After all, if any of our farmers inclines to try his genius, upon the imperfect hints above given, he might uſe, at a ſmall expence, the common fir of the country, both for his triangle and cover: and if he gave his ſtacks, and alſo the conic covers a ſquare form, the trouble and expence of the workmanſhip would be leſs, and the frame itſelf more firm than the circular form, adapted to the common round figure of our ſtacks. If the farmer does not chooſe the triangle and pulleys, the cover muſt be made in ſuch pieces as can be put together with hands, when it is to be uſed. Or, if theſe pieces ſhould be too heavy, and in windy weather become unmanageable; the frame of them only might be made of wood, and be covered when uſed, with ſome coarſe wax cloth, or oil cloth, ſhaped for one ſide of the cone. And, if the top of the cone was preciſely a right angle, any two quarters put together by the baſe, would make a ſquare winnow-cloth, when not in immediate uſe as a cover. The firſt of theſe with the triangle and pulleys will be the moſt manageable, if its expence does not affright the farmer. Laſtly, if the farmer pleaſes, a ſimple

Hints to the ingenious farmer.

wax cloth could be ſhaped to that kind of head, which any ſtack builder would chooſe to leave upon his work, were he like to be overtaken with rain. This could eaſily be thrown over it, and if a ſmall weight were appended to each corner, in order to ſtretch the cloth properly, the rain would run off it more eaſily, and the wind might not be able to raiſe it from its place. Hearing that ſome of my ingenious neighbours were deliberating about theſe temporary coverings, I have thrown out the foregoing hints into their view, merely as materials for their own thoughts; hoping to hear ſoon of ſome contrivance that will remedy the inconveniences of which they have complained theſe two years paſt.

Which he may improve upon.

The ſecond rule.

2*dly*, The builder ſhould endeavour to lay all his outſide ſheaves ſo cloſs together, that no vacancy or even ſlackneſs be left in the whole round, to admit the rain. Above the eaſing it is common to ſpread the bottoms a little, by which their heads are kept more erect, and the vacancies below are better covered.

In caſe of rain after a ſtack is put up, thatching with broom is adviſed.

If before the thatch is prepared, the ſtack ſhall ſuffer from great rains, which threaten a continuance, and the farmer would wiſh to have it protected; inſtead of a cloſs thatching with ſtraw, I would in this caſe adviſe a broom covering, where it can be eaſily had. For, if the root ends of the branches were a little ſharpened, ſo that they could be eaſily thruſt into the ſtack, this work could be done at any time, without waiting till it was dried on the outſide: becauſe, whilſt the broom is a ſufficient protection againſt ſucceeding rains, it admits alſo a ſufficient quantity of air among its branches, to dry up the former wetneſs from the ſheave bottoms. I once ſaved a peaſe ſtack, by putting on this covering in the middle of a thunder ſhower, of ſome hours duration. The ſtack had been juſt put up when it began; it was therefore ſo looſe in its texture, that we were ſoon obliged

A ſucceſsful trial A. D. 1753.

obliged to cover it with winnow cloths, leaſt the rain ſhould ſink into its center: and we only ventured at a time, to uncover half a yard breadth, immediately before the thatchers, till they could put on the broom. Foreſeeing that I ſhould be ſcarce of thatch that year, (1753) I had for my own ſecurity brought home a fortnight before the danger, a load of broom, from a place at two miles diſtance. Had I not been in poſſeſſion of it at the time mentioned, I might have wholly loſt my peaſe ſtack; for the weather continued wet and ſtormy for ſome time after. But as things happened, every ſheaf was preſerved; and that without any inconvenience, except a wet ſkin to the ſervants; and without any expence to the maſter, but a little of his dram bottle, which on ſuch occaſions ought not to be ſpared.

3*dly*, He ſhould take care to leave no riſings, nor hollows in the line of the thatch-gang, that is, from the eaſing to the neck of the top ſheaf. For theſe purpoſes, after the top ſheaf was put on, I have ſeen the ſtack-builder come down, and go round, to take a view of his work on all ſides; and then mounting his ladder, I have ſeen him give every part above the eaſing a little hand dreſſing; that is, pulling out the hollows, preſſing or beating in the riſings, filling up the vacant ſpaces, by ſpreading the bottoms of the neighbouring ſheaves; and laſtly, ſmoothing down the ſtarted pens of a ſheaf bottom, till he gave the whole the neatneſs of a well pulled hay-ſtack. This operation, the work of a few minutes, while a hood ſheaf or a couple of ropes were a-making below, hath, beſides its neatneſs, theſe two advantages; 1*ſt*, It needs leſs thatch; and, 2*dly*, It will bear unhurt a conſiderable rain, till that little can be got and put on. Neither of which will be overlooked, under a weſtern ſcarcity, or in a weſtern climate. *The third rule in building ſtacks.*

Our ſecond rule in covering ſtacks, is, to do it by thatching. *Thatching*

recommended.

thatching. To ſhake on the ſtraw from the top of the ſtack, as is done in the eaſt, coſts perhaps, leſs, time. But it is neither neat nor workman like; nor is it ſo good a ſecurity in rainy weather, unleſs the quantity be greater than we could well ſpare: nor laſtly, can it be done to any purpoſe, but in a dead calm. At the ſame time, while we blame the eaſt country farmers in this particular, they are alſo intitled both to our apology and commendation. Their weather is ſo generally good, and their corns ſo generally clean at bottom, that they do not require the care which ours do. Beſides, they build their ſtacks with ſo much more dexterity than we commonly do; that, with their other advantages of corn and climate, they need leſs covering, or leſs care in putting it on. I am ſtill, however, perſuaded, that thatching is much neater, and a better ſecurity in caſe of bad weather. Only obſerve, that in thatching ſtacks, it is not proper to ſhorten the ſtoppel too much, by thruſting its head far into the ſtuff. Nor is it neceſſary to overlap greatly the heads of the under row, by the tails of that above it. The ſinking of the ſtack through time, tends to overlap them more than at firſt they ſeemed to do; and likewiſe tends to faſten their heads, if they had any hold at all. At any rate, if they can be kept on till the croſs ropes are laid over them, theſe will keep them firm, though they had little other faſtening.

Rules about it.

Of ropes and the care to provide materials.

After the thatch is put on, the next operation is to keep it on with ropes. Before we ſay any thing to this point, we would obſerve, that as the beſt ſtack ropes are made of ſpritts, and other coarſe ſtuff drawn out of bog hay, ſuch as have this convenience ſhould provide themſelves in time. The ſpritts ſhould be drawn from the hay when it lies in the ſwath; and being tied up in ſheaves, they ſhould be ſet up ſingle to dry; and when ſufficiently win, ſhould be kept in a dry place till needed. If this proviſion has been neglected,

neglected, ſmall oats may be threſhed out to ſupply their place. I muſt however blame a want of attention and foreſight, in ſecuring even this trifling convenience, in a time of more leiſure. Hours are ſometimes loſt in dewy mornings, before hay can be turned or ſpread out. It would be profitable, if ſuch times were employed in drawing out the ſpritts and ruſhes, from the finer graſs, for the purpoſes above-mentioned; and the cattle would have more pleaſure in eating the remainder.

Of the ropes that faſten on the top ſheaf.

The firſt thing to be done towards the roping of ſtacks is, to put on ſo many upright ropes as are neceſſary to divide the ſtack properly. A ſtack may be quartered, by two ropes put round the neck of the hooding by the middle, and having their ends faſtened below the eaſing. Theſe ſerve to keep the hooding firm, and are put on before thatching. After the ſtack is thatched, theſe upright ropes ſerve, as a kind of warp, upon which a number of croſs ropes that lie horizontally are wrought, in order to keep the thatch firm and cloſs. If the ſtack is large, three, or four ſuch upright ropes may be put on it, in proportion to its bulk. This done, the workman faſtens his circular ropes to one of the upright ropes, making uſe of his ſhorteſt neareſt the top. Theſe he carries round the ſtack, putting them about each of the upright ropes, in order to keep both firm in their places; and before he ſhifts his ladder, he ſtrokes down the thatch that may be raiſed by the wind, or ruffled by his work, that every part of it may lie neat and ſtraight, when it is left. But in regard that the frequent ſhifting of the ladder, and the carrying it often round the ſtack, is both tedious and laborious, the farmer takes care, 1*ſt*, That his upright ropes be not at ſo great a diſtance from each other; but that he can reach from one to another, without coming down to ſhift his ladder. 2*dly*, He faſtens as many of his croſs ropes at once

Uſed as a warp for the circular ropes.

Of expediting the work.

once as will finish the whole, at equal distances between the hood-sheaf and easing, that he may carry all of them about with him together, and so compleat the work in one round of the ladder: which makes a great saving both of time and labour. When this work is done properly, the ropes resemble a kind of net-work in one piece, which sinks equally down together, as the stack itself subsides. And if at a fortnight's distance the upright ropes were drawn gently downward, so as they could be straitened a little by a new fastening below, every inch of the circular ropes would lie closs to the thatch, and keep it on firmly. The same straitening of the upright ropes may be repeated as there shall afterwards be occasion. The neatest way of fastening them below the easing is, by tying them to a strong circular rope placed there.

The upright ropes to be straitened from time to time.

Though what hath been already said upon the methods of keeping stuff cool, in stack or mow, be a sufficient security to the farmer, if he will be instructed; yet in regard all are not provided with the conveniences recommended, and many never will provide themselves with any of them, chusing rather to follow the beaten road, even though they should mark themselves out by their own ill success and disappointments. In regard also that, however negligent and confident such farmers may be, bad seasons will happen, corns will be spoiled both in stacks and mows, and losses and misfortunes will be the consequences to themselves, and to the public; compassion to both inclines me to add a fourth particular, to what is said above.

The 4th head upon recovering heated corns.

It relates to the means of cooling, and recovering such stuff as is begun to heat, and in danger of spoiling, *&c.*

This calamity was remarkably the case in the high grounds last harvest (1772). The long continuance of the frost had deferred the plowing

The year

still

till near the end of March; the ſeaſon afterwards being cold and late, and the muir lands being naturally ſo, all things ſeemed to concur in making the harveſt very late alſo: and, therefore, peculiarly dangerous to graſſy corns; eſpecially conſidering the long continued wet weather in that ſeaſon. 1772 *a bad harveſt for heating.*

The common practice, when a barn mow heats is, to throw it down betwixt the open doors, and letting it lie there till it cools, and can be put up again in its place. And when one can ſpare the room ſo long as it is needed, the work is eaſy; and, with a little patience and diſcretion, the cure may be effectual. But, alas! in dangerous weather our barns are commonly ſo crammed up, that there is either no room left at all; or the little that is, may be allotted for ſome bit of a field not yet under cover; and perhaps in as much hazard without, as that within ſeems to be. If this remedy ſhould fail us, the next in common uſe is, to carry the heated corn out into the barn-yard and adjacent fields; where it muſt be ſet up, and ſtand till it is ſufficiently cooled and aired. It is eaſy to ſee, that this cannot be done without a conſiderable expence, both of grain and labour; and that every probable mean ſhould be tried, before it is done. And would men be but perſuaded by any arguments to think and provide before hand, ſuch a picture of diſtreſs could be exhibited upon thoſe dangers, as would excite any mind, a degree above ſtupidity itſelf. Suppoſe, for example, the back mow were heated, as well as the foremoſt; that the ſtacks in the barn-yard were ſuffering by the ſame misfortune: ſuppoſe the weather ſo bad, that none of them could be touched; and when a tolerable day came, ſuppoſe the ſtuff without were needing ſuch aſſiſtance, that the farmer could not reſolve which he ſhould begin to: ſuppoſe him ſufficiently aſſured of the loſs he muſt ſuſtain, by taking down, handling, and

Of throwing down mows betwixt the barn doors.

Of carrying them out to the fields.

The miſerable ſituation of the farmer when much of this work is to be done.

and again putting up his corns; ſufficiently apprized of his danger from a change of weather, and ſcarce daring to truſt any thing abroad for fear of it. And yet under all thoſe inconveniencies, contemplate him drove on by dire neceſſity, to undo all his former labours, to renew an expence already incurred, to expoſe himſelf to hazards from which he had but lately eſcaped, and to ſuffer the undoubted loſs of what he thought perfectly ſafe. Contemplate the farmer in this ſituation, and endeavour to conceive what his perplexity, diſtraction, and regrete muſt be. Aſk him, what he would then give to have been at proper pains, with his barn, and barn-yard, in order to have effectually prevented his preſent diſtreſs and inconvenience? I dare ſay there are few of you, who in this perplexed ſituation, would not give more money than what, if well beſtowed, according to the above directions, would have afforded a ſufficient ſecurity, or an adequate remedy. I would willingly put theſe matters in a ſtrong light to you, becauſe it is in the immediate feeling of ſuch diſtreſſes, or in the ſtrong impreſſion that can be made of them upon the mind, that one can know the value of a perfect ſecurity, or certain remedy. For when danger is over, we ſoon forget it, and and therefore incline to baniſh the fears of it; and with them all the care that may be neceſſary to provide for it, againſt the time to come. In ſhort, we never think of paſt danger, till we are involved in a freſh one; and therefore are as unprepared for the laſt, as we were for the firſt.

Of taking in the freſh air to the barns.

In the mean time, not to detain you too long upon an argument, that like all other remedies may be unpleaſant, while highly neceſſary and ſalutary; allow me to obſerve, that if it be extremely troubleſome to carry out our heated corns into the freſh air, it is not very difficult to carry the freſh air into the heated corn, did you once underſtand how it ſhould be done.

Amongſt

Amongſt the reſt that ſuffered by heated corn in the year 1772, my old acquaintance Thomas Orr was one: not indeed in his ſtack-yard, for that was ſufficiently ſecured by the logies and funnels above deſcribed; it was in his barn, for which he was not ſo well provided. But, even there, did his foreſight and ingenuity fail him? No; Thomas may be in danger, but is not ſo often overtaken by it as ſome others. Let us hear then his own account of the matter; for his ſcheme ſeemed moſt ingenious, and was in every ſtep of it well digeſted and prepared. Thomas ſuſpected his barn from the beginning, for he had eyes to ſee it, and was not diſpoſed to diſguiſe it to himſelf, under any fallacious hopes. Therefore, though he could not mend the matter at that time, in the midſt of very bad weather, he took every ſtep, that a wiſe man could take, to ſecure himſelf afterwards. Having an open ſlit in the wall, near the top of his gavel, in building his mow upon it, he uſed the following precautions. Firſt, He ſet one ſtale above another, and ſo had his corn, eſpecially in the middle, ſtanding all on one end; even at the ſides, and upon the front of his mow, he ſtudied to give every ſheaf ſuch a ſlope, as pointed them all, as much as he conveniently could, towards the above-mentioned ſlit, or opening. For he reaſoned juſtly, that when his mow heated, the warm air, as it aſcended, would naturally take along the line of his ſtraw, towards the ſame place, and ſo get out by the vent hole. Thomas, however, did not wholly depend upon the buildingof his mow, though his method was rational, and had been recommended by others. He knew he had hazarded much, as all his neighbours had done; he therefore prepared himſelf for the worſt; for he made uſe of all the ordinary means of knowing the real ſtate of his mow, that is, by thruſting in at different places, four or five hand-ſtaves; and by pulling them out at different times, he was

Thomas Orr's plan.

Deſcribed.

His preparations in building his mow.

able to judge by their warmth in his hand, where the heat was greateſt, and what progreſs it was daily making. Finding, by theſe trials, that the heat was actually begun, he then took an old gun-barrel, and being a ſmith to his trade, he unſcrewed the dock, and took it out altogether. He next ſhaped for the muzzle a few wooden pins, with ſhoulders upon each, that they might not go too far into the barrel, nor ſtick too faſt in it; and theſe pins he ſharpened to a point at their outer end. His deſign by their points was, to thruſt the whole gun-barrel with eaſe into the mow, as far as he thought neceſſary: and then by drawing it a little backward, he thought that the ſhoulders of the pins, by taking hold of the croſs ſtraws, would aſſiſt him in diſlodging them from the muzzle, and ſo leave it quite open, for the outer air to paſs freely through it, into the heart of the mow. Here again his reaſoning was at leaſt ſpecious; *viz.* That if the gun-barrel wanted altogether the pointed pins, the ends of the ſtraw would get into its muzzle, when thruſt inward, and either cork it up wholly, or by their reſiſtance prevent its entrance, without a very great force. And on the other hand, if the pins wanted the ſhoulder, they might either go too far into the barrel, and ſtick too faſt in it, or even be otherwiſe difficult to diſlodge. Laſt of all, Thomas having ready in his houſe a ſmall pair of hand-bellows in order to throw in the freſh air through the barrel, whenever he ſhould find it neceſſary; he thought himſelf prepared for the worſt, and therefore patiently waited till the mow was ſufficiently heated, that ſo the effects of his preparations might be perfectly aſcertained. Accordingly, in a few days, when the neighbours had begun to caſt out their heated corns, Thomas drew ſome of his hand-ſtaves, to ſee in what condition his own was; and finding their warmth ſo great, that he could ſcarce hold in his hand the end of his poles, he inſtantly began his operations.

Further preparations.

operations. So, fixing one of his wooden pins into the muzzle, he thruſt his barrel into the hotteſt of his corn; then drawing it a little outwards, to diſengage the wood, he rolled a little tow round the noſe of the bellows, and twiſting it firmly into the dock end of the barrel, that no air might return that way, he began to blow: and, in one word, he continued blowing, till by drawing one of his neareſt hand-ſtaves, he could feel the inner end of it perfectly cooled. This encouraging his hopes, he drew the barrel from that place; and quickly filling the muzzle with another pin like the former, he thruſt all into another part of the mow, at ſome diſtance from his firſt hole; and blowing as before, he continued till he was again ſatisfied. And thus, by repeating theſe operations again and again, in different places, he was in two hours time, perfectly convinced of his ſucceſs. For all his poles and hand-ſtaves being quite cold and dry, he was ſenſible that all the moiſt and warm vapour was fled. What indeed contributed a little to Thomas's conviction, and perhaps not a little to his ſatisfaction, was a viſit made him by one of his neighbours, during the courſe of his foregoing operations. This man, either informed of Thomas's deſign, or ſuſpecting ſome contrivance going on within, as he ſaw nothing going on without, that was neighbour-like, came to his barn; and obſerving as he paſt the end of it, that the fare, or ſteam of the vapour, was coming out from the ſlit-hole in the gavel, like the ſmoke of kiln-drying, he told Thomas at entering, that if he had not ſuſpected what he was about, he would have imagined that he had laid ten bolls of corn upon a kiln-head within, and had put a good fire to the tail of it. Since the foregoing operations a more effectual experiment has been made upon the mow. It has been all threſhed out for uſe, and the owner declares to me, that he never had any in better condition than it was.

His attempt and ſucceſs.

Thomas,

Thomas, by way of anſwer to ſome compliment made upon his ingenuity, tells me that he is no wiſer than his neighbours; but that he juſt thinks a little what he is going about, and how it ſhould be done. If they would but think a wee, he does not doubt but many of them would contrive things better than he.—Is not his ſentiment both modeſt and juſt,—is it not full of inſtruction? It is: for what is wanting to rational creatures, in the management of their ordinary affairs, but thought, or the exerciſe of their rational faculties about them?

His modeſty.

Such was the ſucceſs of Thomas Orr's ingenious contrivance, all executed with his own hand, and the full effect of it ſeen in two hours or ſo. This no doubt ought to enhance its value, and recommend the trial to others. Indeed the whole of it ſeemed to me, from the beginning, to be planned out upon ſuch ſolid principles of reaſon, and ſuch an accurate attention to circumſtances, as could ſcarce fail of its effect. I have therefore always encouraged Thomas to ſuch trials; and ſcarce ever had occaſion to correct him, if it was not with reſpect to ſome of the properties of air, which Thomas could not be ſuppoſed to know. I mean the effects of heat in rarifying it, and the effects of a vacuum, occaſioned by rarifaction, in attracting the external cold air. But having already explained ourſelves on theſe points, pages 52 and 53, we ſhall not enlarge upon them here. One, however, from all that has been ſaid, may ſafely adviſe farmers in one ſingle word, that if their barns and barn-yards are not accommodated with ſome of thoſe proviſions recommended on the ſecond head of this period, they ſhould at leaſt in threatening harveſts provide themſelves with a hand-bellows and a gun-barrel. If one has not a hand-bellows, a little more time might anſwer all its purpoſes. Or, if the gun-barrel be not at hand, a ſtick could be bored, or a ſmall rhone could be made,

His plan recommended.

made, that could be laid in, and corked up, till the time required its uſe; or it could be thruſt in afterwards, wherever it was found needful. Theſe are portable conveniencies: they can be carried out into the barn yard, and applied with equal ſucceſs to a heated ſtack, as to a heated mow. And if a wiſe man can by any ſuch trifling conveniencies, extricate himſelf from the danger and difficulties above-mentioned, or relieve himſelf from the labours and perplexities there deſcribed, they are ſurely worth a little of his attention and care.

Variations in it for the farmer's eaſe

Few men have however imitated, or even hearkened to my friend Thomas, though he may be ſaid, to have both ſought and found out many uſeful inventions. Thomas has plowed his land theſe ten years paſt, with two old mares, and a plow of his own contrivance, long before we got the Merſe, or Northumberland chain plow into this corner. He has often defied his neighbours to make better work, or to produce better corn upon the like grounds; yet I know not if, as yet, one man has tried the like, though he can have the wood, the iron, and workmanſhip at half the ordinary price. He is indeed a philoſopher from native reflection, and the powers of genius; yet the ſimplicity of his looks, and aukwardneſs of his air, are too much againſt him, to gain him any general credit or leading with the bulk of men. It is too much the diſpoſition of human nature, to contemn alike, (if not more) what is above their comprehenſion, as what is below it. Hence all blockheads are the moſt cenſorious of ingenious men and meaſures; being ſcarce able to approve any thing, but what is perfectly vulgar, and beneath all notice. A fool is wiſer in his own conceit, than ten men that can render a reaſon. Beſides, ſloth and inactivity hurt many, that are neither ſtupid nor incapable. Hence men will ſtruggle through the whole of life, with yearly, nay, with daily inconveniencies and difficulties, rather

The fate of ſuperior ingenuity.

Neglect.

The cauſes of it.

rather than beſtow one day's labour, or the price of it, to relieve themſelves from them for ever. Pride too, an high opinion of ourſelves, and a ſcornful contempt of others; a prejudice alſo againſt new cuſtoms, and a bigotted attachment to old ones; all of them conſpire againſt inſtruction and improvement. Theſe have got into our worldly employments, as well as our religious concerns; and equally obſtruct the intereſts of this life, as they do thoſe of the life to come. Laſt of all, men who, animated by rivalſhips and interferings, will fight the world for a diſputed intereſt, and reckon themſelves capitally injured if they loſe it, will yet neglect a thouſand opportunites, by each of which, if duly improved, ten times the value may be ſaved or gained. The gradual improvements of an age, which are the gifts of providence, and the ſources of public eaſe and opulence, thoſe narrow minded and narrow hearted men will deſpiſe; wrapt up in their own indolence, ignorance, and ſelf-ſufficiency, they will ſcarce pull their hands from their boſoms, to receive the offered bounty, that could make them rich or eaſy, wiſe or happy. None but the wiſe can be made much wiſer; for to him only that hath ſhall be given. Hence it is, that improvements of every kind, even thoſe of ſaving and oeconomy, the moſt obvious of any, go on but ſlowly; and inſtead of encouragement, meet with neglect, or oppoſition, from the far greateſt number of mankind.

My GOOD FRIENDS,

Apology of the author.

I have now preſented to your conſideration, a few thoughts upon the ſubject of harveſt-work, in bad ſeaſons or uncertain weather. You that are moſt ſkilful in the buſineſs, and moſt attentive to the affairs of it, will perhaps imagine, I have been too minute and particular, in deſcribing things

things generally known. Or it may be, you will obſerve ſome particulars, which you think erroneous; and that you yourſelves could have ſuggeſted better methods of working. Both theſe indeed may be true enough in part; but you will, I hope, excuſe me for the firſt of theſe, to wit, the minuteneſs, when I tell you, that this ſketch was drawn up at the deſire of an eaſt country acquaintance, in whoſe neighbourhood the general goodneſs of harveſt-weather, does not perhaps make ſuch frequent demands upon their care and invention, as a weſt country climate may do: and therefore to many there, ſome of our weſt country cuſtoms, as being leſs needed, may be alſo leſs known. Beſides, the wiſer ſort among ourſelves will even allow, that our farmers are not all alike wiſe, all alike intelligent, convincible, and careful: and muſt further acknowledge, that inſtruction is deſigned for the ignorant, not for the ſkilful; argument is deſigned for the obſtinate, not for the candid; and motive is deſigned for the ſlothful, not for the vigilant and active farmer. And you all know, that ſuch deſigns cannot be ſo well obtained, but by one's being both particular and preſſing on ſome more important points.

For his minuteneſs.

As to the ſecond thing that may be obſerved upon this letter, to wit, That ſome particulars in it may be erroneous, and that you yourſelves could have ſuggeſted better methods of working. I am not even unwilling to believe that the firſt may be the caſe, and ſhould be particularly pleaſed to find that the laſt were ſo too, *i. e.* that you were able to correct the error, as it would ſhew you had thought upon your buſineſs, and were able both to direct and exemplify a better practice than what is common. What I have all along promiſed myſelf from the publication of theſe thoughts, upon a ſubject which all of you have had acceſs to learn, as much as the writer of them, is *1ſt*, That ſome of you may meet with certain hints among them, to

For his miſtakes.

His views and expectations.

which you may not formerly have given sufficient attention; but may now apply to your own use and benefit. Or, 2*dly*, That you may meet with some things that you can correct, or improve upon; and be thus led to the free exercise of your own faculties of thought and reflection; especially upon a subject which needs a great deal of both, and gets but little of either: for I am confident, that what you learn by your own thought, will always produce the most solid and lasting knowledge. 3*dly*, I expect that this slight essay will occasionally serve to introduce the innocent subjects contained in it, into ordinary conversation: by which means, its rules and instructions may be canvassed and examined, and either approved or censured as there is cause. Thus, from the private reflections of individuals, from the various opinions, and perhaps collisions of different minds, new light may be struck out upon any point; and even better methods discovered, tried, and prosecuted. For next to the instruction of the ignorant, or the animation of the careless, the design of all such hints and reasonings should certainly be, to set wise men themselves a-thinking, observing, and inquiring; that by a thorough consideration of their affairs, they may be fully prepared for every business on hand. Indeed, to think much may be troublesome, especially to such as have not been frequently accustomed to it. Perhaps the most part of the world would rather do any thing than think; and some may have very special objections against thinking; it gives them but little comfort to find out their own faults and blunders. Servants seldom imagine it to be their duty: as an English writer says, they will scarce both think and work for the same hire. The master, whose interest it is, should therefore both plan the general business, and all the particular operations of his farm. If he is not able for his own part, he must be often at a loss, and not seldom

Thinking recommended.

dom a ſufferer: and the more eſpecially ſo, if the preſumption and ſelf-ſufficiency which commonly attend ignorance, hinder him from conſulting the wiſe; or from employing ſuch, whoſe knowledge and activity deſerve his confidence. But no man needs to be, no wiſe man will be aſhamed, to aſk, and even to take advice, of thoſe who are below him in the world. For tho' it is too common, that a poor man's wiſdom ſhall be deſpiſed, and his words not heard, by thoſe above all others who need them moſt; yet, in all trades and profeſſions, wiſdom excelleth folly, and knowledge ignorance, as far as light excelleth darkneſs.

A readineſs to learn the property of wiſe men.

Your ordinary meetings, my good friends, are commonly as a ſociety, employed about your funds for charity. It is an honourable deſign; and while I commend your ſcheme and views, I have no reaſon to blame your management. Your ſtock, in a very few years, ſince I firſt met with you, hath riſen conſiderably; and you are now able, and with diſcretion I think willing, to relieve the needy and misfortunate. Nay, many have been the better of your funds, who had no other claim upon them but as they are funds of charity; having never contributed any thing towards them. Theſe meetings however might be more uſeful, were they more frequent, and were ſome of them eſpecially appointed for converſing upon the ſubjects relative to farming. Theſe funds too could not be miſapplied, were ſome part of them allotted annually, to encourage ingenuity, and experiment in your own buſineſs; and to propagate the knowledge requiſite to farming, among your own fraternity. By this means, you might guard your brethren againſt the misfortunes which ariſe from ignorance and miſmanagement; and enable them, by their ſkill and activity, to ſecure their future independence and eaſe. For allow me to obſerve, *1ſt*, That the beſt beſtowed charity is that which tends to raiſe a brother above the

The farmers ſociety approved of

More frequent meetings recommended. As alſo an application of ſome part of their funds to the improvement of farming.

The beſt charity.

The eaſieſt beſtowed. *The ſureſt gain to every man.*

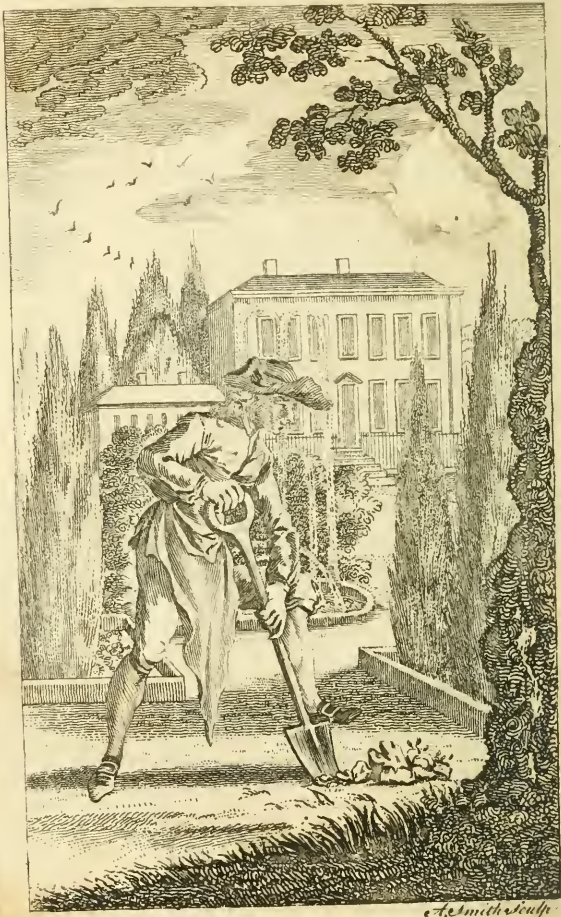
the need of any. 2*dly*, That as it is much more beneficial, ſo it is much more eaſy to prevent evils, than to remedy them. And laſt of all—That what is got by care and induſtry, by wiſdom and management, is, to every man, his ſureſt and moſt laſting wealth. I remain, my good friends,

Your affectionate well-wiſher,

FEB. 11. 1773. and ſervant,———

P. S. If this letter is acceptable to your brethren, and becomes in any meaſure uſeful to the public, you may again perhaps receive a few hints upon ſpring-labour, ſuited to your cuſtoms and climate; ſhould the writer's health and leiſure permit him to put down and digeſt his occaſional obſervations on that ſubject.

FRONTISPIECE



A. Smith Sculp.

The Hand of the diligent maketh Rich.

THE COMPLETE

ENGLISH GARDENER:

OR,

Gardening made perfectly Easy:

CONTAINING,

Full and p[ar]t[icu]l[a]r Directions for the proper Management

OF THE

FLOW[ER]-, FRUIT, and KITCHEN Gardens,

for every Month in the Year.

The whole laid down in so plain and easy a Manner, that all who are desirous of managing a Garden, may do it effectually, without any other Instructions whatever.

To which is added,

The COMPLETE BEE-MASTER; or,

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At *Overton* in *Wiltshire*;
Who has practised Gardening, thro' all its branches, in many counties, upwards of Forty Years.

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Raise the gay FLOWER, and flavour'd FRUIT produce;
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And while you profit, pleasing wonders see.
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INTRODUCTION.

THE Art of Gardening may be deemed the moſt uſeful and entertaining of all others, as it expands the variegated beauties of nature, and adminiſters the moſt wholſome food to the body.—It has been the ſtudy and delight of the greateſt men in all ages, as well as employed the ableſt pens: we need, therefore, no other apology for preſenting the world with this compendious ſyſtem, than the utility of attempting to abridge and arrange the whole in ſuch a manner, as to aſſiſt the underſtanding and practice of the reader.

In ſhort, it has been our care faithfully to ſelect the produce and inſtructions relative to the manures of each month in the year, as the moſt approved method of aſſiſting the memory, without perplexing the mind.

Thus

Thus we hope to exhibit a pleasing view of the product of every month in the vegetable creation, to the honour of the universal parents of nature, and benefit of mankind in general, many of whom may be thereby prompted to co-operate with a wise providence, in promoting his wise and salutary designs.

To render our undertaking still more extensively useful, we have annexed, *A prescription for the destruction of every species of vermin that infest fruits, plants,* &c. as also, *A Concise Treatise on the management of Bees*; and, *Directions for the breeding and rearing of Poultry.*

Likewise certain Rules to judge of the Weather: grounded on fifty years experience and observations, by an ancient Shepherd on the South Downs, Suss x.

THE

THE

Complete *Engliſh* GARDENER:

OR,

Gardener's Monthly Chronicle.

AS the bounties of nature cannot be more beautifully diſplayed than in the vegetable creation, and as the utility of gardening amply compenſates for all our labour; we have in this little treatiſe laid down in chronological order the manner of conducting, not only the gentleman, who exerciſes it for his amuſement, but likewiſe the induſtrious gardener, who follows it as a profeſſion. In order to effect which we begin, firſt, with the month of

JANUARY.

Work to be done in the Kitchen Garden.

YOUR ground muſt be thrown up in ridges that it may be properly ſweetened for the reception of ſpring crops. Near walls, hedges, or pales, you muſt ſow carrot, radiſh, lettuce, and ſmall ſallading.

Hot beds muſt be prepared for ſowing of melon ſeed and cucumbers: likewiſe for aſparagus, which muſt be done at two different times, leaving about three weeks between each.

Muſtard, creſſes, rape, radiſh, and turnep ſeeds, muſt be ſown on beds covered with mats, over arches made with hoops. If the weather ſhould be ſevere, you muſt cover the mats with ſtraw.

When the weather is open, and the ground not too moiſt, you muſt earth up your cellery in order to blanch it. If it ſhould be frofty, cover the ridges with long litter, or tanner's bark.

Windſor, Sandwich, and Token beans, ſhould be ſown about the middle of this month ſome muſhroom beds muſt be carefully covered with long, freſh ſtraw.

Tranſplant near the end of this month ſome cabbage plants of the ſugar-loaf kind; but previous to this the ground muſt be ſown with ſpinnach. Take off all decayed leaves from your cauliflower plants under frames, and if the weather is temperate, give them as much air as poſſible.

If the ſeverity of the weather ſhould render your former labour ineffectual, repeat your planting, not forgetting to take particular care of the neceſſary defence.

Peas and beans ſhould be now planted in order to ſucceed thoſe in November and December. Sow parſly in drills; likewiſe chervil about the end of this month.

Work relative to the Fruit Garden.

The roots of all new planted trees muſt be covered with mulch, to keep off the ſeverity of the

the froſt. Fig-trees which are placed againſt walls muſt be covered with mats or reeds, firſt taking off thoſe which were leſt on the branches in Autumn. Cut the uſeleſs branches of your fruit trees cloſe to the ſtem. Prune your vines, dwarf trees, and any hardy ſort of fruit.

If the enſuing month ſhould produce moiſt weather, clear your fruit trees from moſs, and prepare for planting. Begin now to forward your early fruits, by placing dung or fire under your forcing frames. Prepare your decayed eſpaliers, and place them regularly at proper diſtances.

If the weather be mild, take graffs from early fruits, ſuch as cherries, plums, apples, pears, &c. and lay them in the earth as near as you can to a dry wall. If ſevere wheather cover them with litter or ſtraw. If they are to be removed, cover the ends with clay, and faſten them together with a band made of ſtraw.

Work relative to the Flower Garden.

In froſty weather the beds of ranunculuſes, anemonies, hyacinths, and other valuable flowers ſhould be covered, with ſome light covering, ſuch as mats or peas-haulm. When they riſe above the ground, arch the bed over with hoops, covered with mats or cloths. If the weather be mild, you may uncover them. Turn over pour compoſition of earth for future ſowing pretty often, that the froſt may mellow them.

If the ſeaſon be mild, towards the end of this month, take off all decayed leaves from your auriculas; take ſome of the earth out of the pots, but be very careful not to diſturb the roots; then fill them again, but let none of the earth fall upon the leaves. If

If the weather be frofty, cover them with mats or cloths ; but if it be temperate let them have the benefit of the air, and the refreſhment of moderate rain.

You muſt defend your tender flowers from heavy rains, ſnow, and hard froſt ; and your plants muſt be properly guarded from the deſtruction of vermin.

Management of the different Manures in the courſe of this month.

The moſt material thing in the kitchen garden is the hot-bed, which muſt be ſo placed as to avoid the power of the north and ſouth-weſt winds, and to receive the cheriſhing heat of the ſun. When you have marked out its extent, drive ſtakes into the ground all round it, about a foot diſtance between each ; cover the ſtakes with a hay-band, and then fill it with wet litter, or new horſe dung, taking care to form the whole of an equal ſubſtance, by treading it down various times during its being filled.

When you have thus prepared your bed, adjuſt your wooden frames in ſuch manner as to admit the mold at top, and let them be placed on a ſlope. Leave ſpace enough for the earth, and be careful not to confine the ſhooting of your plants.

Take ſome earth from an old hot-bed, and mix with it ; after which cover it with ſtraw or mats, ſupported with ſhort props, and let it continue till it be warm, but not hot. This you may know by putting a ſtick into the ground, which when taken out will feel warm to your hand ; but if the heat ſhould loſe its ſtrength, place by the ſide of the bed a quantity of freſh dung.

After

After your plants have ſprung up in the hot-bed, let them have progreſſively the refreſhment of the air and ſun. When ſtrong enough tranſplant them into a bed not ſo hot as the former; frequently apply moderate watering, and ſecure them from the violent heat of the ſun. A little before ſ ſet cover the glaſſes with mats and litter to p ent their being deſtroyed by blaſts or ſharp winds.

The hot-bed formed for aſparagus muſt be a ſpot of ground adapted on purpoſe, well dug and dunged. Form your lines about ſeven or eight inches aſunder, and when they are a year old, plant the roots ſix or ſeven inches apart. In this ſituation they muſt remain two years, taking care to preſerve them from weeds, before they will be fit for the hot-bed, which muſt be made ſtrong, ſurrounded with bands of ſtraw, and covered with earth at leaſt ſix inches deep. Your roots being thus planted as near as poſſible, cover the buds of the plants two inches thick with earth. Let them continue in this manner five or ſix days, after which put on the frames and glaſſes, and cover them at leaſt three inches thick with freſh earth. On the buds firſt ſhooting, give them as much air as the mildneſs of the weather will admit. If temperate weather continues they will increaſe daily for about a month; but if cold weather ſhould enſue, you muſt apply freſh dung to the glaſſes every night; the good effects of which will be ſoon diſcovered.

Strawberries may be produced early if placed on a moderate hot-bed; as may likewiſe, ſallad in a very ſhort time by means of powdered lime laid on each ſide with a track of dung in the middle; the whole muſt be covered over with good rich

rich mould. Radiſhes are likewiſe raiſed on the hot bed, but muſt be properly ſurrounded with mould that they may take deep roots before the dung reaches them ; by this means they may be produced almoſt any time in year. The hotſpur, charlton maſter, and other peas muſt be ſown in drills about three feet aſunder, that you may have the opportunity of going between them, and the lines muſt run from north to ſouth. After they have riſen near ſix inches high put earth on both ſides the lines about four inches deep, raiſing on the laſt ſides of them a kind of bank to ſcreen them from piercing winds.

Your vines muſt be pruned this month, paying proper reſpect to the ſtrength of the ſhoots : you muſt cut off all uſeleſs branches, leaving the ſhort jointed and ſtrongeſt nine inches, or more according to the ſtrength of the wood ; but if they be old, take off the ſtem and ſupply its place with a young one. If you intend to circulate the vine, the laſt year's branches muſt be ſhortened in proportion to the body.

In order to raiſe anemonies you muſt form your earth on a rich ſand well ſifted, and of a pliable texture, for they ſeldom blow in a hard ſoil. Put a thin layer of willow earth at their firſt tranſplanting, and it will further their growth amazingly.

The ranunculus is managed much in the ſame manner as the anemony, only be careful to preſerve them from the ſeverity of ſharp winds and froſt, becauſe if the leaves ſhould be once nipped they will ſoon decay, and the roots follow. They muſt be planted in rows about four inches aſunder.

The ſallads which are produced this month conſiſt of mint, creſſes, radiſhes, young onions, cellery

cellery and endive; young lettuce, boorcole, ſavoy cabbage, ſprouts of Dutch and Batterſea cabbages, red and Ruſſian cabbages, and various ſoup herbs, together with the tops of bromet and chervil.

Although this ſeaſon is generally attended with ſevere weather, yet we have ſome fruit, eſpecially the Bugi pear, which, when kept ſo long, is eſteemed delicious. There are likewiſe the golden ruſſet, leather-coat ruſſetin, winter pearmain, golden pippin, whitmill pippin, nonpareil, and monſtrous benette. Nuts, almonds, medlars, and ſervices. Aloes begin to throw out their flower-ſtems, and oranges to bloſſom. If the weather is mild, and you have neglected to ſow the ſeeds of auriculas, and polyanthuſes in the months of October and November, you may ſow them at this time. The winter aconite may be tranſplanted in flower.

The flowers that grow in this month are, the ſingle anemonies, winter ciclamens, acacia, ſnowdrops, primroſes, winter aconite, couble blue violet, dwarf tithymal, and yellow ficoides.

FEBRUARY.

The Kitchen Garden.

DIG and prepare you ground for the ſowing of carrots, parſneps, radiſhes, ſpinach, beets, beans, peas, parſley and cabbage lettuce. Sow corn ſalled, large rooted parſley, ſummer and winter ſavory, marygolds, and other hardy plants, but place them in ſeparate beds or ſpots. Moderate

rate hot beds muſt be prepared for ſowing cauliflower ſeeds for Summer plants ; theſe ſeldom ſucceed unleſs the ſoil be moiſt. If the ſhoots are forward enough you may ſlip ſome old artichoak-ſtocks about the end of the month. Plant peas and beans every fortnight or three weeks, particularly the large ſort of each. Tranſplant the melon and cucumber plants into new beds, but not till the violent heat of the bed is abated. Cover the muſhroom beds with frames, and place them under thatched ſheds to preſerve them from heavy rain and ſnow. Kidney beans for an early crop muſt be planted on a moderate hot-bed, and when the weather is mild, give them as much air as you can.

Plant imperial, Sileſia and cos lettuces at the cloſe of the month, if the weather ſhould be temperate. The ſeed of aſparagus muſt be ſown in a good bed, in order to raiſe plants for the next year. Potatoes and Jeruſalem artichoaks muſt be planted in dry ground trenched deep ; as alſo garlick, ſhallots, and rocambole. Plant hops, dig the ground, and prune the old roots, but be careful not to injure the buds of the plants. Tranſplant young cabbages for a crop.

In the Fruit Garden.

In mild weather let your fig-trees be open to the air, but when froſty, let them be again covered. Prune ſuch trees as have been neglected, and nail them to the wall. Where they are wanting tranſplant all ſorts of fruit trees, firſt breaking the clods that the ground may be ſoft. After rain, clear of the moſs from the trees, and be careful of bullfinches, who will deſtroy the hopes of your labour : if the end of the month ſhould

ſhould produce mild weather, graft cherries, plums, pears, and other hardy fruit.

Draw off all ſuperfluous moiſture from the roots of treets, cut and lay quickſets, and earth up the roots of uncovered fruit-trees. Make new plantations of ſtrawberries, raſberries, gooſberries, and currants, if omitted in Autumn; likewiſe refreſh with water, and air, the ſtrawberries in hot-beds. Be careful of your early fruits or forcing frames, and give them air or heat as the weather will admit.

In the Flower Garden.

Towards the end of this month, if the weather be temperate, plant your carnations in the pots you intend them to flower; in bad weather let them be covered over with mats and kept warm. Sow auricula and polyanthus ſeeds in pots of good rich mould, and place them where they may receive the mild heat of the morning ſun. Keep your flower-beds clear of all weeds, as they will detriment their growth. On froſty nights cover your beds of tulips, anemories, and ranunculuſes with mats. The flowering trees to be tranſplanted this month are jeſſamine, honeyſuckle, lilacs, roſes, laburnum, bladder and ſcorpion ſenas, ſpireas and altheas.

The ever-greens muſt not be removed till the beginning of April. Carnations that were planted in Autumn muſt have freſh earth put to them; and toward the end of the month ſow ſweet williams, pinks, primroſe trees, larkſpurs, hollyhocks, and Canterbury-bells. On the ſide of a ſhady bank fix your plantations for the lilly of the valley.

All foreign ſeeds, eſpecially the annual kind,

 that

that come from warm climates, muſt be ſown in hot-beds; likewiſe orange and lemon kernels; the kernels muſt be put in the ground as ſoon as taken out of the fruit. Clean the different diviſions of you wilderneſs, turn and roll your gravel walks and lawns, and keep them clear of moſs. Head orange trees, give them freſh mould, and ſprinkle them with water that have been ſteeped in ſheep's dung two or three days, but be careful it only goes on the root; if it ſhould fall on the leaves, they will be infallibly deſtroyed. The double larkſpur and China ſtarworts may be now ſown in dry borders on a moderate hot bed, giving them proper air every day.

The flowers that grow this month are Perſian iris, crocuſes, ſilver alaturnus, narciſſus dens caninus, hepatica, yellow gilliflowers, primroſes and anemonies, mezerion tree, fruit-bearing almond, colutea, and double pilewort.

Inſtructions for Grafting.

In this part of gardening there are four diſtinct methods, viz. Whip-grafting, grafting in the cleft, in the bark, and by approach; the firſt of which is practiſed on the pear, cherry, and plum.

The method to be uſed with ſtocks is as follows: when you have cut the ſtock and ſloped it (if you put but one ſcyon in) cleave it with a pruning knife about two inches deep, and inject a wedge to keep it open till the ſcyon is already to tie and clay it, firſt covering the chink with moſs. The ſide of the wedge in the ſcyon, which is to be next the wood, muſt be cut thinner.

When you graft in the bark, which is generally

rally done on apples, you muſt cut the head of the ſtock ſloping, ſlitting only the bark a little above an inch on the ſouth weſt ſide, and looſen the bark at the top of the ſlit with your knife; after which, by a ſmooth inſtrument of hard wood, or ivory cut ſloping as the ſcyon, make room for it by thruſting it down between the bark and the wood where it was ſlit. When this is done, firſt uſing your opening inſtrument, take your ſcyon and put it into the ſtock, thruſting the top of the ſlope as low as the top ſurface of the ſtock. The bark on each ſide the ſcyon muſt be ſo ordered as to fall cloſe to the ſtock, after which it muſt be covered over with clay.

The method of whip-grafting, when the ſtock and ſcyon are nearly of a thickneſs, is performed thus. Let them be both ſloped alike at leaſt a full inch; as ſoon as they will lie true, tie one upon the other; clay and bind the place, or make a ſlit in the bare place of the ſtock, commencing near the top of the ſlope, ſlitting a little way, and in the ſloped face of the ſcyon doing the like, beginning at the ſame diſtance from the lower end, carrying it upwards; when that is done, join them by thruſting the one ſlice into the other till they exactly cover, then put clay, &c.

The various tools neceſſary for grafting are a ſtrong knife with a thick back, a neat hand-ſaw, a ſharp pen-knife to cut the grafts, a grafting chiſſel, a ſmall mallet; woolen yarn, or braſs ſtrings; and clay intermixed with horſe dung.

The method of grafting by approach, or in arching, is performed where a ſtock grows ſo near another tree, the fruit of which you would increaſe, that it may be joined with a branch of

that tree, by cutting the ſides about three inches long, and fitting them in ſuch manner that the paſſages of the ſap may meet; in this ſituation let them be clayed and bound. Take off the head of the ſtock, when they are well cemented, about four inches above the binding; and in the next month cut off the ſtub that was left of the ſtock, and the ſcyon underneath; cloſe the place which is grafted, that the ſtock only may ſubſiſt.

Inſtructions for pruning Apricots.

Nail the branches, which ſhoot forth in the firſt ſummer, horizontally; and if you have plenty, take off thoſe which ſprout forward.

The next ſummer proceed in the ſame manner, rubbing away all foreright ſhoots, and nailing the other as horizontally as poſſible on the wall. About a fortnight after Michaelmas prune the trees again as before.

The third year do the ſame, and be particularly careful not to hurt the ſpurs which riſe from the wood of the preceding year. Shorten the branches in winter pruning, ſo as to ſupply freſh wood where wanting, and cut off all luxuriant branches.

In pruning of peaches, you muſt be careful to keep them conſtantly ſupplied with bearing wood. Take off all weakly ſhoots, and nail the others to the wall, fixing them at ſuch diſtance that the leaves may have room to ſpread without ſhading the branches too much; theſe muſt be alſo nailed ſloping or horizontally.

When your fruit is as big as a ſmall nut, thin them about the diſtance of four or five inches, by which means they will much increaſe in their growth.

The

The Nectarine is in all reſpects to be managed as the peach; and other ſtony fruit in the ſame manner as theſe, only requiring leſs care, as they are hardier in their nature.

There are two things eſſentially neceſſary to be obſerved in pruning the before mentioned fruits. Firſt to furniſh every part of a tree with bearing wood; and ſecondly, not to lay the branches too cloſe together.

Culture of Flowers *and* Plants.

For the auricula, a box of oak or deal muſt be prepared about four feet long, two feet wide, and ſix inches deep, with holes in the bottom about ſix inches aſunder; lay cinders of ſea coals about two inches thick in the box, cover them over till the box is full with earth taken out of hollow willow trees.

The ſeeds muſt be ſown on the top, without any earth put over them; they muſt be preſſed with a flat board into the mould a little below the edge of the box, to prevent the light ſeeds from floating over the brim in watering.

The box muſt be placed, from the time of ſowing till the beginning of April, in ſome place where they may receive the heat of the ſun; after that they muſt be removed to ſome place that is ſhady.

If the ſeedlings fail the firſt year, they will come up the ſecond, and may be tranſplanted in July or Auguſt.

When you have planted them in beds of light, well ſifted mould, about four inches from each other, they muſt be placed ſo as to receive the heat of the morning ſun.

In April following they will ſhew themſe'ves, when they muſt be tranſplanted into pots of ſoil, compoſed of an equal quantity of rotten dung. Be careful to preſerve them from the rain, as it will much detriment their colour.

The polyanthus requires very little culture, and may be annually produced from ſeeds. If the weather is mild, you may ſow them the latter end of this month, but it muſt be in a good, rich ſoil, under a wall or hedge.

If any particular ſort is wanted, they muſt be taken from a ſlip, as the ſeed ſeldom produces the ſame kind. When they are out in five or ſix leaves, place them in ſhady borders, where they are intended to blow. In order to preſerve their beauty, you muſt tranſplant them often.

The larkſpur may be propagated by letting the ſeeds of the flowers drop, which will come up the next Spring. Plant them in an open place, and ſhift them often.

The hollyhock is raiſed from ſeeds ſown this month on a bed of good earth, and muſt be planted near walls or hedges. In October they will be fit to tranſplant.

Of ſweet williams there are two kinds, the ſingle and double. The firſt are raiſed by ſowing the ſeed in light-earth, and will be fit to tranſplant about Michaelmas.

The latter are raiſed by layers, much in the ſame manner as carnations.

Roſes are all produced by layers or ſuckers, which may be either planted now or in Autumn; if they are planted this month, be careful they are properly watered.

Pomegranates are raiſed by laying down the young ſhoots, either this month or the next, and may

may be tranſplanted, either in the Spring or at Autumn. Let them be put into pots, or againſt a ſouth wall, that the fruit may have opportunity to ripen.

The luburnum is raiſed by ſowing the ſeeds on a bed of freſh light earth, ſifting mould over them about the depth of half an inch. They will appear in about thirty days. Two years after coming up they muſt be tranſplanted. An open place is as beneficial to their growth as under the ſhade of trees.

The althea, or Chineſe roſe, is beſt propagated in a light, rich ſoil. It is a green-houſe plant, and is raiſed in a hot-bed, ſowing the ſeeds this month, or in March.

Of lilacs there are three ſorts, the white the deep purple, and the yellow blotched; they are raiſed by ſuckers, which if taken off in October, you may plant in the nurſery, and in four years after they will be fit to tranſplant. They will thrive in almoſt any ſoil that is dry, ſometimes digging up the earth round the root.

The philirea, which is a beautiful plant, may be ſown this month on open beds of good mould; they make fine ornamental hedges, and if properly ſupported with rails or ſtakes will grow very quick.

Of laurus-tinus there are two different ſorts, the ordinary and the Portugueſe, both of which are produced from the ſeed ſown as ſoon as they are ripe, in good ground, or of ſuckers and layers. Though often trainted as a headed plant, yet it is beſt if planted in a wilderneſs or againſt a wall. This, like all foreign plants, is inclined to bloſſom about Spring in its own climate, which

which is our Autumn, and therefore this month is the proper time for pruning it.

The laurel-tree is propagated either by ſeed or berries, as ſoon as they are ripe. Towards the end of the month you may tranſplant them.

The yew-tree is beſt cultivated in a light, barren ſoil; the leaves are pliable to any form; the moſt common are, conic or pyra idal. About the end of two years you may ſet them in the nurſery, and place them near a foot aſunder in April. Let rotten ſtraw be put about their roots.

The moſt beautiful of ever greens is the holly. When the berries of this plant are ripe, they muſt be gathered, and after having laid ſome time to ſweeten, they muſt be put in ſand or earth, after which they may be ſown in the nurſery beds.

The ſtriped holly, which only has a place in gardens, cannot be pruned into thoſe nice figures which moſt other trees admit of, and are therefore converted into a ball, a pyramid, or headed.

The bay-tree is propagated much in the ſame manner as the holly. If moiſt weather ſhould enſue, they will come up in about ſix weeks; you muſt ſhelter them the three firſt Winters, after which they muſt be tranſplanted. Of this kind there is one with variegated leaves, which, if diſcoloured by the froſt, will ſhoot afreſh, if you cut off the top branch in the Spring.

Directions for the manures of this month.

The beds for raiſing muſhroons muſt be formed in the following manner. Dig a trench five or ſix inches deep, lay in it either the dung of horſes,

horſes, mules, or aſſes, ridgeways; or dung from a mill where the horſes tread; this muſt be the laſt covering before the earth is laid on. When the bed is compleated, which muſt be three or four feet high, cover the dung with freſh earth about two or three inches thick; after this get ſome dry muſhroon earth, and ſtrew it over the bed on the laſt covering of dung before the mould is laid on.

In ſevere weather you muſt put hoops and mats over it, and the whole bed muſt be covered with dry litter or ſtraw, to ſcreen it as well from the Summer's ſun as Winter's froſt.

When the bed is thus prepared, twice or thrice a week you muſt water the covering of ſtraw, and in about two months the muſhroons will begin to appear, at which time they muſt be cut as they ſpring up.

The different kinds of cabbages are the Dutch, the Savoy, the Ruſſia, the ſugar-loaf, and the Batterſea. They may be produced in any ſoil, if kept well watered. The Savoy cabbages are uſed for Winter, and towards the Spring they ſhoot forth ſprouts which are even preferable to the cabbages themſelves.

A light ground mixed with ſand is beſt calculated for carrots. Dry weather is the beſt to ſow them. Keep them as clear from weeds as poſſible after the firſt houghing, till they are full grown; then take them up, and what you don't uſe for the preſent, lay in ſand for the Winter.

Turneps will grow in any ſoil, though they thrive beſt in a ſandy, loomy ground; when the plants begin to leaf, they muſt be houghed at a proper diſtance from each other.

Parſneps

Parſneps thrive beſt in a rich ſoil, and are to be treated much in the ſame manner as carrots; only a greater diviſion muſt be left between them.

The manner of cultivating ground for ſtrawberries is as follows. Take a quantity of horſe-dung and coal-aſhes well mixed, lay it upon the land, and then dig or trench it; after this borders muſt be made three feet high, and ſlips planted thereon from eight to eighteen inches apart, according to the ſorts.

There are five kinds of ſtrawberries, the Chili, the hautboy, the ſcarlet, and the red and white wood-ſtrawberries. The Chili ſtrawberry, being the largeſt of all, ſhould be ſet two feet aſunder.

Of raſberries there are two ſorts, the white and the red, the former of which is moſt valuable. They thrive in much the ſame ground as ſtrawberries, and are propagated by ſlips taken from the roots about the end of this month, or the beginning of March.

They muſt be planted in ſingle rows about a foot aſunder; between each row muſt be a ſpace of three feet, leaving the heads when planted, two feet high. The Muſcovy cluſtered raſberries will very ſoon ripen, if planted againſt a wall, betwixt the trees, when there is a vacancy.

You muſt be careful to keep them clear of weeds in the Spring, and prune the tops of the ſtrongeſt ſhoots of the laſt year, leaving them about three feet high, and cut away all branches that are dead and weak. This, like the ſtrawberry, will not have its true crop till the third Summer after it is planted.

Gooſeberries are produced either by ſeeds, ſuckers, or cuttings; the ſeeds may be ſown as ſoon

ſoon as ripe, and the following Spring they will come up. The ſuckers are to be taken from the roots of old trees, when their leaves are fallen in open weather, and tranſplanted in nurſeries. If the cuttings are planted in September and October, they will take root.

Currants thrive in much the ſame ſoil as the gooſeberry, and are generally planted againſt walls, that the fruit may grow larger: but the ſtandards produce the ſweeteſt fruit.

Thoſe who are curious may preſerve the fruit till Auguſt or September, by tying up the buſhes in mats when they are juſt ripe. The largeſt fruit being always found on the youngeſt branches, both of the gooſeberry and currant; the tree ſhould be kept from old wood, never leaving any ſhoots beyond the growth of three years.

Among the various things produced this month are, ſallad-herbs, water-creſſes, and blanched dandelion. If January's froſt has not prevented it, cucumbers will produce fruit towards the cloſe of the month, as will likewiſe kidney-beans, if ſown at the ſame time. There are alſo cabbages, ſprouts, white-beet, turneps, parſneps, potatoes, ſkerrets, and ſcorzonera; likewiſe chardones and young carrots. Aſparagus is alſo much improved in flavour.

We have now many kinds of pears and apples. Likewiſe nuts, almonds, and medlars. And there are, even at this time, cherries and green apricots. The oranges in the green-houſe being now to ſhoot forth their bloſſoms.

MARCH.

M A R C H.

Work to be done in the Kitchen Garden.

IF the heat of your cucumber and melon beds is declined, you muſt renew it by putting new horſe-dung round the ſides; give them air in the day, and cover the glaſſes with mats every night. Cabbages, ſavoys, and red cabbages muſt be now ſown for Winter uſe. Plant out your cauliflower plants for the general crop; and if the weather is mild let them have air.

Sow radiſhes, ſpinach, and ſallad herbs every week. Peas and beans every fortnight.

Cellery muſt be now ſown to ſucceed that in the laſt month. Slip and plant mint, tanſey, tarragon, penny-royal, chamomile, balm, ſavory, ſage, roſemary, hyſſop, lavender, wormwood, ſouthernwood, thyme, and moſt plants that are aromatic.

Lettuce plants, which have ſtood the Winter in warm borders, muſt now be planted in a more open expoſure. Sileſia, cos, and imperial lettuces muſt be ſown in an open ſpot of ground, to ſucceed thoſe in February.

About the middle of this month dreſs and rake your beds of aſparagus, and in April the buds will appear. You may now make new plantations of aſparagus, in the natural ground prepared for that purpoſe.

Dreſs your artichoaks, leaving only two or three of the beſt ſituated and cleareſt plants upon each root to bear; ſlip up the reſt clean off, and plant

plant the beſt of them to produce heads, the latter part of the year.

Near the end of the month ſow on hot-beds, purſlane, naſturtium, French and African marigolds; likewiſe marygolds in the natural earth. In ſome warm place ſow young ſallads, likewiſe rape, ſorrel, finnochia and ſpinach. Burnet and endive muſt be ſown very thin to prevent running to ſeed.

Sow leeks, chervil, fennel, beet, and dill. Divide the roots of tarragon, and make young plantations of chives.

You muſt now dreſs up your ſtrawberry beds, and keep them clear of runners till the plants bloſſom; when neceſſary, let them be watered. Slip and ſet ſage, &c. if the ſoil is clayey, or if over moiſt, mix aſhes to bind it.

The gardener muſt be careful this month that the inclemency of the weather don't injure his plants and trees: all young planted herbs muſt be watered every morning. You muſt be diligent in deſtroying the weeds before they run to ſeed. Your gardens ought to be compleatly cropped by the end of this month.

In the Fruit Garden.

It is now time to make an end of planting fruit-trees, and to fill up all vacant ſpaces; alſo to finiſh the pruning of apricots, peaches and nectarines, which are to be done agreeable to our former directions.

Such peaches, plums, pears, and cherries as have had one year's growth, ſhould be pruned the beginning of this month. Neither is it too late to cut off the heads of new planted trees againſt

a wall, and to reduce them to five or ſix buds. Prune ſix-trees, and what great wood can be ſpared muſt be cut cloſe off to the ſtem.

Graft apples and cherries; the firſt take beſt on crab ſtocks, and the laſt on black cherry; but the moſt curious method is by inoculation.

The heads of thoſe ſtocks which were inoculated laſt Summer, muſt be cut off two inches above the bud ſlopeways, beginning the ſlope oppoſite to the bud; and the dead wood, by ſome called the cock-ſpur, muſt be cut clean off the following year in March, that the wound may be healed, and the ſtock and ſcyon the better incorporate.

Layers of the vine and fig muſt now be laid, and horizontal ſhelters erected over ſome of the earlieſt bloſſoms of fruit-trees to ſecure them from perpendicular dews and ſevere froſts.

Sow poppies, the venus's looking-glaſs, roſe-campion, valerian, foxglove, acanthus, and ſuch like other annuals, as you could not venture to ſow in February. Likewiſe the ſeeds of the various kinds of ſtock gilly-flowers, particularly the ten-weeks. Sow a few every fortnight in the common earth, and divide or ſlip all kinds of fibrous-rooted plants, not in flowering, ſuch as the gentianella, cardinal-flower, double white rocket, ſcarlet lychnis, roſe-campions, double wall-flowers, perennial ſun-flowers, aſters, monk-hoods, ſweet williams, hollyhocks, &c.

Plant tube-roſes in pots of freſh earth, giving them a gentle warmth, but no water till they have riſen out of the earth. Your tulips muſt be ſheltered from blights, which may be done by covering them with mats or canvas.

Sow

Sow the ſeeds of the campanula pyramidalis, and take off ſlips from the roots; let your pots have freſh air, and place them in ſome pit, where they may receive the warmth of the ſun, which will much increaſe their growth. Your ſhelves and places of ſhelter for the auricula muſt be mended and repaired; they muſt be defended on all ſides, except the eaſt, from the ſun, and be careful that no rain comes to them. Your carnation layers muſt be tranſplanted for blowing, if they were not planted the latter end of the year.

Slip and ſet box for edgings, or in figured works: ſow the ſeeds of juniper and fir, and tranſplant the yew, ever-greens, philirea and holly. Plant and make layers of the paſſion tree, and graft the Spaniſh white jeſſamine upon the common white Engliſh ſort. Move your ananas or pine apples out of the ſtove in the bark beds, that the fruit may be forwarded.

This month and the next make layers of the vine, which will be fit to tranſplant the Michaelmas following; this tree is alſo propagated either by laying down the young branches as ſoon as the fruit is gathered, or at that time making plantations of cuttings. It may be likewiſe raiſed by drawing a young branch through the hole at the bottom of a garden pot about Chriſtmas, and then filling the pot with earth; they will take root, and may be cut from the mother plant with fruit growing on them the Michaelmas following. Thoſe which are thus raiſed in pots will preſerve their fruit good almoſt till Chriſtmas, if they are ſheltered from the weather in a green houſe, or ſome ſuch place.

Figs are propagated either from ſeeds, ſuckers, or layers: the ſuckers are ſeparated from the old

roots the beginning of March, and are to be then tranſplanted, without cutting any of their tops. The layers are managed much like the vine, and if the ſeeds are ſown in rubbiſh or ſuch like ſoil about March, they will readily come up. It delights in the ſame ſoil with the vine, and may be planted in ſtandards, or againſt walls. Obſervations have been made that the ſtandard fig-trees bear fruit in greater abundance and much better than thoſe planted againſt walls, becauſe, as they are endangered by pruning, ſo they thrive not in confinement.

This tree is different in the manner of pruning from any other; for as the method is to take away the ſmall branches in other trees, in this it is to be avoided, becauſe the fig puts forth its fruit at the extremities of the laſt year's ſhoots. You muſt cut off ſome of the weak ſmaller ſhoots, which do not promiſe to bear, but be careful you do it cloſe to the great wood. Take away all the great wood to avoid confuſion, and the branches of the tree muſt not be permitted to grow too high, becauſe it will prevent their being full; therefore the new thick branches muſt be ſhortened yearly to a foot, or thereabouts; you muſt break off the bud at the end of the branches in Spring, that inſtead of a ſingle branch it may have two, which will cauſe them the ealier to ſhoot out figs. Whatever you cut from the fig muſt be as cloſe to the great wood or roots as you can; and you may cut down a whole tree to the roots, to recover it from a ſickly ſtate, if the winter has been unkind. It puts forth ſuckers, which muſt be kept down, in great abundance.

When

When your figs have ſhot ſix or ſeven inches, cut or ſtop the ſhoots, and continue ſo to do all the Summer, by which two crops in a year will ripen.

Now is the time to plant beans, leaving a diſtance of three feet betwixt the rows, and the large ſort of peas four feet. Set them about five inches apart in a ſtiff ſoil, without any manure: keep them clear of weeds, and water them about the time of their bloſſom. Beans in the Winter are commonly ſown in ſingle lines, under a ſouth wall or hedge.

Mint and balm will grow any where, and are propagated by parting their roots any time in the Spring, as well as by ſowing. The mint is more generally cultivated than the other, being of itſelf a good ſallad, of uſe in ſoups and ſauces, and proper for diſtilling. When 'tis about a foot high you may cut it in bunches for Winter uſe, obſerving to dry it in the ſhade; which ſhould be attended to as a general rule for others herbs.

Thyme is raiſed either by ſeeds ſown in this month or April, or from ſlips planted at the ſame time: there are ſeveral ſorts of this herb, one whereof has variegated leaves, and is proper for edgings.

Sage is likewiſe propagated from ſeeds or ſlips, but moſt commonly from the latter, taken from the roots at the end of this month, or the beginning of April, and planted in light earth a foot aſunder.

Rue is a plant which delights in ſhady places, and is multiplyed by ſlips ſet in a light ſoil: this plant has been thought to prevent the plague, for which, in times of peſtilence, it was much valued.

Penny-royal and camomile are propagated from ſlips planted in March or April; they grow beſt in a ſtiff ſoil, and ſhould be fixed in a ſhady place. Fennel, dill, parſley, &c. are raiſed from ſeeds ſown in the natural ground this month.

There art two ſorts of marjoram; that which is called Winter ſweet marjoram will laſt ſome years; the other ſown annually on hot beds is not ſo durable. The firſt is increaſed by planting the ſlips in moiſt ground about March or April.

Tanſey is increaſed by parting the roots in the Spring, and is a plant which, for its valuable qualities, ſhould be always kept dry in the Winter. It is extremely uſeful for people who are afflicted with the gout in the ſtomach. That diſorder has been removed by boiling half a handful of it in a pint of ſtrong white wine, and drinking it hot.

The ſeed of cellery may be ſown this month and the next in ſuch part of the garden as is open to the air. It muſt be planted about ſix weeks after it comes up, in beds, allowing ſix inches diſtance between the plants: they muſt remain there till the middle of June, when ſome of the firſt ſowing will be fit to plant in trenches for blanching. A light rich ſoil is beſt, and the trenches muſt be cut eight or ten inches wide, and of the ſame depth, in which the plants are to be put as ſoon as made, after having pruned off their tops and roots; they are to ſtand at five inches diſtance, and as they increaſe in growth, are to be earthed up to within four or five inches of their tops.

Endive loves a light rich ſoil, and though it may be ſown in this month, yet it is better to leave it till the next. When it has been come up

up about ſix weeks, plant it in beds, as directed for cellery, and, about the middle of July, plant it in rows about ſix inches apart. As ſoon as it is well grown you may tie up ſome of it to whiten, which work ſhould be continued every fortnight.

Purſlane is a very cooling herb, and admired by ſome in Summer ſallads. If it is ſown this month it muſt be covered with glaſſes; if not till the next, the heat of the ſun will be ſufficient. Sorrel is ſown in rows or drills, like other ſallading.

Spinage, in March, April, and May, is to be ſown in ſeveral parcels of ground at different times, about a fortnight from one another, as a conſtant ſupply for the table, till there is plenty of other greens. There are two ſorts of it, the prickly and the round: this, like moſt other plants of the like nature, thrives in a light, rich ſoil. Spinage-ſeed is ſown for the Winter in the beginning of Auguſt.

In this month ſow ſeeds of the cabbage lettuce of all kinds in the open ground among the crops; they delight in rich light ground and a warm expoſure: to preſerve a ſupply they ſhould be ſown every month from March to Auguſt.

The ſeeds of artichoak are ſown at the beginning of this month, and planted out in April. The middle of this month is the moſt proper ſeaſon to ſlip the roots for new plantations; they are generally raiſed by ſuckers. When the ſlips are cut, you muſt leave three heads growing upon every old root. The ſlips muſt be planted in lines two feet aſunder, and four feet diſtance from each other. After planting they muſt be well watered. A ſtrong rich ſoil, well expoſed to the ſun, is the moſt proper for them.

Sow

Sow your cauliflower ſeed this month in ſome corner of the garden, where the plants may be ſheltered. Near the middle of the month, when they are in their firſt leaf, plant them in a nurſery about five or ſix inches aſunder, and continue them there till the latter end of May or June, when they are to be tranſplanted abroad for your crop. Rainy or moiſt weather is the beſt. If it be a dry ſeaſon, make holes in the ground about three feet apart, and before you fix the plants, water the earth. You muſt afterwards water them very often.

The Autumn following they will bear large flowers; but ſome of them will not flower till after Michaelmaſs, and ſuch plants muſt be taken up with the earth round their roots, and ſet together in a green houſe, or ſome ſuch place, where they will enlarge themſelves, and be fit to uſe in the Winter.

To have Summer cauliflowers you muſt ſow the ſeed the beginning of Auguſt, upon ſome decayed hot bed, and tranſplant them about three inches diſtance, as ſoon as they have put out their firſt leaf, upon ſome other bed; the middle of September draw out every other plant, and ſet them ſix inches apart under a ſouth wall, to ſtand there till Spring, when they are to be planted out for flowering; or you may ſet them in the places where they are to bloſſom, covering them with glaſs bells in the Winter.

If the weather is open, Aſparagus may be ſown the beginning of this month; the February or March following the ſeedlings will be fit to be planted out.

In order to obtain a natural crop, you muſt proceed thus; firſt meaſure out your ground, allowing four feet for breadth of each bed, and

two

two feet for the alleys between the bed; then open a trench at one end, and lay in the bottom of it horſe-dung, about ſix or eight inches thick. Then trench the ſame quantity of ground, lying next to the firſt trench, throwing the earth of the ſecond trench upon the dung in the bottom of the firſt; and thus continue till the whole is done.

This being over, in lines at eight or ten inches diſtance, plant the aſparagus, taken freſh out of the nurſey, ſpreading their roots, and covering their buds with earth about four inches thick. Each bed takes up four rows; when all the beds are planted, ſow the whole with onions, and rake it level, for the alleys will not be of any uſe till after Michaelmas, when the onions will be off, and the ſhoots of the aſparagus plants made that ſummer are to be cut down. Then dig up the alleys, and throw part of the ſoil upon the beds, to raiſe the earth about five or ſix inches above the buds of the plants, ſupplying the alleys with dung or ſome rich ſoil.

In March following, the earth muſt be raked down, and the alleys are to be turned up every Winter, and now and then enriched with dung. After Michaelmas cut down the haulm, and give them their Winter dreſſing; and you are not to be later than the middle of March without raking and laying down the beds.

It is a general rule not to cut any of the aſparagus till the fourth year after planting; but where the plants are ſtrong, a few may be taken here and there, in very ſmall quantities, the third year.

About the beginning of April, the aſparagus appears above ground, and may be cut till the

begin

beginning of June, when they have ſtood five years; but if they are younger, you muſt not cut them after the middle of May.

In the Flower Garden.

The poppy is an annual plant, ſown in ſpots, and of various colours; it is a beautiful but not laſting flower, and is commonly found in borders under walls. The venus's looking-glaſs is likewiſe ſown in much the ſame manner. White hellebore is propagated from off-ſets parted in March, in a ſoil that is light and rich.

Primroſes will grow in almoſt any ſoil. The ſeed is ſown in the natural ground about the latter end of this month; and the ſeedling plants, which will not bloſſom till the ſecond year, muſt be ſown in a nurſery, and the young plants removed to proper places the Auguſt after they are come up.

The ſtock gilly-flower is a ſhrub raiſed from ſeeds ſown in this month, and tranſplanted the Autumn following. It loves a light dry ſoil; and the double kinds of them, which we find amongſt the ſeedling plants, may be increaſed by ſlips or cuttings planted in May, June, or July; which being tranſplanted into pots, are, for their grateful ſmell, a proper ornament for the niceſt places in the garden, and to adorn chimnies.

The ſeveral ſorts of double wall-flowers may be raiſed from ſlips planted in ſhady places, either in March, April, May, or June; but the bloody wall-flower may be more eaſily propagated from ſeeds ſown in March

The ſun-flower is raiſed from ſeeds ſown in large borders, where it will grow ſix feet high;

it

it will grow in the ſhade, and almoſt any ſoil. Everlaſting double and ſingle ſun-flowers are raiſed by parting the roots in this month, or at Michaelmas.

The paſſion-tree is raiſed either from layers or ſeeds ſown this month; and if you plant the cuttings in May or June in fine earth, they will take root: it muſt be fixed in a place that is moiſt and cool, and be often watered. It will bear fruit ſhaped like lemons, and of the ſame colour. You cannot fail of fruit if you lay plenty of cow-dung about the roots, and water them often during the flowering ſeaſon. It is called the paſſion tree by the contrivance of ſome Spaniſh friars, who, by adding ſome things wanting in the natural flower, made it as a repreſentation of our Saviour's Paſſion.

The juniper tree is a plant ſo pliable, that it may be brought to any form whatever: a barren ſoil is beſt; the berries muſt be ſown in rich ground without watering. They will come up in about two months, and they muſt remain in the ſeed-bed two years before they will be fit to tranſplant.

The palm-tree is a green-houſe plant, but might be made to ſtand abroad, after being ſheltered three or four years. It is produced by ſetting the ſtone of the fruit in light earth this month, and giving them the aſſiſtance of a hot-bed.

Produce of the month.

We have now, excluſive of the ſallads the preceding month, ſome purſlane, with young tops of tarragon. Sprouts of cabbages, young cabbage

cabbage plants, or coleworts, and Winter ſpinach. Carrots ſown in July, radiſhes of Michaelmas, red beet, and ſome late ſown turneps.

In the hot-beds we have kidney-beans and ſome peas: and cucumbers upon the plants raiſed in January; we have alſo aſparagus upon the hot-bed made in February, preferable to thoſe of the preceding months. And, towards the end of this month, the radiſhes ſown upon the hot-bed in February will be fit to draw.

At the end of this month we have ſome ſcarlet ſtrawberries ripe upon the hot-beds; and alſo ſome few beans, if we forward them by artificial heats. Fruits yet laſting, are pears and apples of ſeveral ſorts, with nuts, almonds, &c.. We have in ſome gardens ripe cherries and green apricots.

The flowers that blow this month are crocus, daiſies, violets, wall-flowers, ſtock gilly-flowers, iris's of different ſorts, hepatica's, crown imperial, primroſes double and ſingle, ſome kinds of fritillaria, and near the end of the month a few auricula's. Anemonies double and ſingle, hyacinths, jonquils, narciſſus, ſome precope tulips, violets, and the white polyanthus.

APRIL.

Work to be done in the Kitchen Garden.

IN the early part of this month plant kidney-beans in ſome warm ſpot; likewiſe garden-beans for a latter crop: ſow marrow-fat and other large kind of peas: continue to ſow all ſorts

forts of young falled herbs, alſo cos, Sileſia, and cabbages lettuces; young cellery plants muſt be ſhifted into beds of rich earth, and, till they have taken root, muſt be watered every day. Draw up the earth to the ſtems of your peas and beans, keep them clear of weeds, and hough the ground between the rows. Prepare your dung to make ridges for melons and cucumbers, and ſow ſweet marjoram, thyme, and other aromatic plants. The ſtems of your cabbage and cauliflower plants, which were planted in Autumn, or early in the Spring, muſt be earthed up cloſe; let this be done after a ſhower of rain.

Plant cuttings or ſlips of roſemary and lavender, eſpecially after rain. Near the end of the month hough carrots, parſneps, and onions, leaving the two firſt above five or ſix, and the latter about three or four inches diſtance. Continue to make plantations of ſtrawberries till the middle of the month.

In open borders ſow ſmall ſallads, ſuch as creſſes, muſtard, turnep, or rape and radiſh: ſow ſeeds of thyme, and other aromatic herbs, which muſt not be delayed longer than the latter end of this month: ſow ſmall ſeeds ſhallow in the earth if the ſoil is heavy, if it is light, ſandy ground, they muſt be ſown deeper.

Make ridges for cucumbers and melons for a full crop, and prune the melon plants upon the forward ridge from all ſuperfluous branches; but this is to be done very carefully, without lifting up the runners from the ground, which might bruiſe the tender branches, and endanger the whole plant. They may be raiſed under bell-glaſſes, or oiled paper, covered over with two hoop-

ſticks ſtuck in the ground, one acroſs the other, the ſize of a bell-glaſs.

If the weather be dry and windy, you are to ſtake up all new-planted trees, if that work was neglected in the preceding month, watering them well once in eight or ten days. Defend trees and plants from ſnails and ſlugs, which in this month make great deſtruction in the kitchen-garden.

In the Fruit Garden.

All ſuckers muſt be removed from fig-trees, which are now apt to ſend forth plentifully. The apples that remain to be grafted may be compleated this month, which is the beſt time for grafting between the bark and the wood.

You muſt watch the new planted vines, and not ſuffer above one ſhoot, or two at moſt, to remain. The only thing you are to endeavour to accompliſh is, to get large bearing wood as ſoon as poſſible, which may be effected by a taking away the ſmalleſt ſhoots; the head being diſburdened, the root is ſtrengthened of courſe. Rub off ſuch young ſhoots of new-planted trees againſt walls as direct themſelves forward, leaving only thoſe which ſhoot ſideways.

New planted trees ſhould be often refreſhed with water, and have either a ſemicircular paving of ſmall ſtones round their roots, or a ſmall heap of weeds or graſs laid to keep them moiſt and cool.

The binding of all trees that are not thriving ſhould this month be taken off. Let your garden be kept clean, and dig borders half ſpit deep. The moſt effectual method to deſtroy the weeds, and

and preſerve a good culture to old trees, is by repeatedly ſtirring up the earth.

The reaſon why the bloſſoms of young fruit fall off from vigorous peach-trees in this month, has been compared to a nurſe overmuch abounding with milk, by which means the child is frequently in danger of being choaked. It is on this principle that thoſe who are experienced in gardening have directed the laying the branches of trees horizontally, and keeping them free from great wood, and perpendicular ſhoots in the middle, that the ſap may be carried in that due proportion and quantity which is neceſſary. It is more eaſy to be effected by horizontal than perpendicular ſhoots.

Pear and apple-trees that are barren muſt be managed thus; take off the ſtrongeſt branches about a quarter of an inch, according to the bigneſs of the branch, cutting it entirely away to the wood. They will continue to bear fruit for ſome years; and when they die, you will always find in the pear-tree a ſufficient number of others to ſucceed them.

Cherry-trees that are not in a thriving way muſt be dealt with thus; ſlit down the tree perpendicularly with the point of a knife, juſt entering the bark of the ſtem to prevent their being hide-bound, becauſe the grain of the bark, contrary to moſt other trees, runs horizontally. If this operation is not executed, it will remain in an unthriving ſtate for ten or fifteen years; but after they have been thus dealt with, they will thrive and proſper amazingly.

The gardener muſt now be particularly careful to deſtroy all ſnails and ſlugs, which are very detrimental to the young wall-fruit. The only

means to effect this is to wrap about the ſtem of a tree two or three rounds of line, or rope made of horſe-hair, ſuch as are generally uſed to hang cloaths on ; theſe are ſo full of ſtubs and ſtraggling points of the hair, that neither a ſnail nor ſlug can paſs over them, without being killed ; ſo that the head of the tree, if it be a ſtandard or dwarf, can receive no hurt, if the bottom of the ſtem is properly ſecured.

When the hair is very ſhort that forms theſe lines it is by far the beſt ; for then they will be full of points, and compleatly armed againſt any attempts of theſe deſtructive vermin. In eſpaliers of fruit-trees it is only neceſſary to wrap theſe hair-lines about the ſtems of trees near the root, and about the bottom of every ſtake, which is to be done in the Winter when the ſnails are laid up in cloſe quarters. In order to preſerve plants and herbs, which are liable to be deſtroyed by ſlugs or ſnails, the hair-lines are to be faſtened about the edges of the beds in which they are planted.

In the Flower Garden.

This month and the beginning of the next, ſow the ſeeds of the carnation, a flower of all others the moſt delightful as well for its agreeable ſmell as beautiful colours. The compoſt proper for this flower is made of ſandy loam, and well conſumed melon earth, one load of the latter to two of the former ; they muſt be well ſifted together, and let them lie in a heap for ſome time to mellow ; then ſift it a ſecond time, either to ſow the ſeeds in, or to plant your layers on. When you have filled your pot with

with this earth, and ſmoothed the top, ſprinkle on your ſeeds, and after having covered them with the ſame compoſt, preſs it gently with a board, and let them ſtand open to the air; the ſeed will come up in about three weeks, and the young plants be fit to tranſplant into beds the July following, where they muſt be ſet about ten inches diſtant from each other, and ſhaded from the ſun with mats for about three weeks, uncovering them every night, that the dews may refreſh them.

The different kinds of this flower are divided into five claſſes, and are diſtinguiſhed by the names of piketees, painted ladies, beazarts, flakes and flames: the piketees are of a white ground, ſpotted colour, or pounced with red or purple; the painted ladies have their petals tinged on the upper ſide, either with red or purple, and the under ſide of the leaves is plain white; the beazarts are ſtriped with four diſtinct colours; the flakes are of two colours or more, always ſtriped; and the flames have a red ground ſtriped with black or very dark colours. Each of theſe claſſes is very numerous, but the piketees abundantly ſo. As tulips are the glory of the Spring, ſo theſe flowers are the pride of the Summer. The ſeeds of this flower are gathered the latter end of September, in dry weather, with the ſtalks they grow upon, and they muſt remain expoſed to the ſun through a glaſs for a month or two, without opening any of the huſks till the time of ſowing the ſeeds.

Now ſow in the natural ground all foreign ſeeds, and ſuch flowering ſeeds as have been omitted the preceding month. Sow ſcarlet beans, and when they are grown up faſten them properly

to a wall, where the branches will advantageouſly ſpread. The ſeed is annually ſown this month in good ground well expoſed to the ſun. Sow ſcabious and marygolds, and part and ſet all fibrous rooted plants.

About the beginning of this month your auricula ſeeds will appear above ground, and are to be carefully watered; and thoſe auricula which are now in their bloom, ſhould be refreſhed with moderate waterings every three days; but they are to be guarded againſt the ſun and rains.

After rain clip your edgings of box. Sow pine and fir ſeeds, covering them with a net to keep them from the birds: this is the beſt time of the Spring to remove all ſorts of ever-greens. If the weather be moiſt it is not yet too late to make layers of jeſſamine, honeyſuckle, roſes, and ſuch like ſhrubs.

Inſtructions relative to the manure of the month.

Melon ſeeds are ſown on the hot-bed for ridge plants the beginning of March, and about a week after ſowing they are fit to plant out four inches apart, where they are to remain till their firſt leaf is about the bigneſs of a crown piece; when the ſecond or third joint appears, you muſt cut off the prime leader from each plant near the ear-leaves, and they will each of them quickly put out three other runners, which will produce fruit in abundance; thoſe are commonly pruned at every third or fourth joint.

About the latter end of April, the plants they raiſe will be fit to plant on ridges, which are thus made: cut a trench about two feet and a half

half wide, and ſixteen inches deep, in which lay horſe-litter, prepared as for a hot-bed, about two feet thick, ſpread equally and trod gently; then at the diſtance of about four feet, in the middle of the ridge, you are to make holes ten inches over and ſix deep, which are to be filled with earth prepared for that purpoſe. When this is done, the whole muſt be covered with the ſame earth, about five inches thick; and the beds are to be made four feet wide and flat. Two or three days after the ridges are made, plant two melon plants in each hole, and cover them with glaſſes and mats.

Of kinney-beans there are two ſorts; the one bears early and near the root, without running high, called the Batterſea bean; the other grows near ſix feet high. Theſe beans muſt be ſown the firſt week in this month, in a light freſh ſoil, making drills from north to ſouth, and laying the beans in them about four inches aſunder, covering them with earth, raiſed in a ridge, to keep the wet from them. The lines of the Batterſea bean ſhould be two feet apart; and the other kind are to be ſowed in rows, like the rounceval peas, having alleys between them two feet and a half wide: the Batterſea kind need not be ſtaked: but the others will not bear well, unleſs they are ſtaked. From the firſt ſowing in this month, we may once every three weeks, till the middle of July, continue to ſow freſh ground with kidney-beans to ſucceed one another; obſerving, that when the ground is very dry, as in June and July, and the weather hot, we muſt water the drills as ſoon as we have opened them, before we put in the ſeed, which will contribute to their vegetation; but

after

after they are ſown, we muſt avoid watering them. The Batterſea beans, out of curioſity, may be ſown in hot beds the firſt week in September, and they will produce beans fit to gather in January.

It is the buſineſs of a gardener, if he has ground enough, to provide ſo many crops of peas as may furniſh a table throughout the whole Summer: about November or December is ſown the firſt crop; and the Charlton, or maſter hotſpur, are the moſt proper for that ſeaſon, ſown in drills about two or three feet aſunder, the lines running from north to ſouth: in February a ſecond crop of the ſame kind of peas ſhould be ſown; and in March we may put in a third of the ſame ſort: about the beginning of April ſome ground may be prepared for the dwarf-peas, which ſeldom riſe higher than half a foot, and are ſet four or five inches apart, in lines about eighteen inches diſtant from one another: there is a ſort of dwarf peas may be ſown in May or June, to have a conſtant ſupply of young peas; the ſmalleſt ſort are ſown in edgings, and being ſown upon a gentle hot bed the firſt week in September, will produce peas in the Winter.

Roſemary and lavender grow beſt in a light ſandy ſoil, and are raiſed from ſlips planted in this month, which quickly take root if they are ſhoots of the laſt year, but if older, they will not grow: theſe herbs are apt to ſuffer by froſts, and ſhould be planted in the dryeſt and warmeſt part of the garden.

The products of the month.

Upon natural beds in gardens near London, we have plenty of aſparagus, but in the more ſouthern parts of England it is cut ſooner by a fortnight. We have plenty of cucumbers and muſhrooms, that were ſown on hot beds made the beginning of February. Young radiſhes are now very plentiful; and towards the end of the month ſome of the Dutch brown lettuce, which have ſtood the Winter, will begin to cabbage. Sallads on the natural ground are, creſſes, radiſh, turnip, and muſtard; and the other herbs proper to mix with them are, young onions, terregon, and burnet. There are ſcallions, leeks, and ſweet herbs, growing of all ſorts. Young carrots, ſown in Autumn, and ſome ſprouts from the old ſtems of cabbages and coleworts, or young cabbage plants: radiſh tops are at this time a very good ſallad.

There are ſeveral ſorts of fruit that are now ripe; cherries and large green apricots are to be found in plenty in fruit gardens; alſo ripe ſtrawberries, upon thoſe plants which have been aſſiſted by hot beds.

Be careful to water your pine apples often, in the heat of the day giving them air, and if they want larger pots, tranſplant them.

The flowers that blow this month are, auriculas, polyanthus's, tulips, daiſies, heparica, iris's, wall flower, roſemary, tanſies, ranuncula, gentianellas, crown imperal, double cuckow flower, ſea pink, double paradiſe, ſyringas, fritillaries, laurus tinus, ſtar of Bethlehem, marſh marigold, paliurus, and lilly of the valley.

M A Y.

Buſineſs of the Kitchen Garden.

TAKE out all the plants from the roots of your artichoaks, which have been produced ſince the old ſtocks were ſlipped, and cut off all the ſmall artichoaks from the ſides of the ſtems. If it is likely to rain ſow turneps, hoe thoſe ſowed laſt month, and in open ground ſow cucumbers for pickling. Towards the latter end of the month, if the weather is favourable, tranſplant the tomatos for ſoups, and the capſicum for pickling, which have been raiſed upon hot beds; and if the weather is dry, water them often. You may forward the cabbaging of your early cabbages, by tying their leaves together with a withy or baſs mat. Deſtroy all manner of weeds in your garden-beds, before they ſhed their ſeed. Sow peas and beans in a moiſt ſoil for a latter crop. About the middle of the month plant cauliflowers for Winter uſe; keep the ground moiſt, and ſhade the beds every day with mats. Plant out the red and white cabbages and ſavoys for Winter uſe. Tranſplant the firſt ſown cellery into drills for blanching; draw the earth about the ſtems of the cauliflowers, cabbage plants, beans, or any others crop. In the heat of the day ſhade the cucumbers under frames with mats, but let the melons in warm weather have air. Tranſplant Sileſia, cos, and imperial luttuces, to ſucceed thoſe of the laſt month.

In the Fruit Garden.

You muſt be very careful to thin peaches and apricots of their ſuperabundant fruit, for too many on a tree make the whole inſipid ; and therefore two upon one branch are eſteemed ſufficient. You muſt now take away all dry, withered branches from wall trees, and be careful to cleanſe them from ſnaile, cankers, &c. Cut off the extremities of the ſhoots of gooſberries, which will in a great meaſure prevent or kill the canker-worm.

Tie up the ſhoots of the vine to the props, leaving only three or four of the ſtrongeſt ſhoots. Looſen or diſengage ſuch branches of the vine as will be obſerved ſometimes to be bound between the joints of the wall, and behind the larger wood. About the latter end of the month begin to nail the moſt forward branches of the vine, where fruit is cloſe to the wall, and be carful to pick off all fruitleſs ſhoots.

In the Flower Garden.

Your choice tulips muſt be ſhaded from the heat of the ſun, and defended from rain ; when they have done flowering break off their ſeed-pods.

The ficoides, which is propagated by the cuttings being planted abroad in a natural bed of earth in this month, will be fit to put in pots in Auguſt, where it may remain in the open air till the latter end of September : ſome kinds of this plant are annual, and therefore muſt be raiſed from ſeeds every year ; and one ſort of it will

will ſtand the Winter, if we raiſed young plants of it about July or Auguſt, that do not bloſſom three or four months. The ſhrub kinds which have their ſtalks woody will bear moderate watering, but the others, which are more ſucculent, muſt have very little water. Theſe plants muſt have the benefit of the ſun to open their bloſſoms, unleſs two kinds, which only flower in the night. The cuttings of theſe plants ſhould not be planted till the ſun has dried up the wounded parts.

The torch-thiſtle bears no leaves. It is a ſucculent plant, propagated from cuttings, planted between May and the end of July; they muſt be planted upon a little hill in the middle of the pot, for they can hardly endure water; they muſt ſtand abroad about twenty days to take root, before put into the hot-bed, obſerving to water them at their firſt putting in pot; and during the Summer months they may now and then be gently refreſhed: the beſt compoſt for theſe plants is the rubbiſh of old walls, mixed with about one third of ſandy ſoil.

The myrtle tree is increaſed by layers in this month; the youngeſt ſhoots that are tender muſt be bent into the earth after it is well ſtirred, and being often refreſhed with water, will take root, and be fit to take off from the mother plants the Spring following. The cuttings of this tree are planted in July, ſtripping off the leaves two inches from each cutting, and ſetting that depth about an inch apart, in pots of fine light earth, watering them frequently till they have taken root, which will be about the latter end of Auguſt: this young plantation is to remain till the ſecond of March before they are tranſplanted into

into ſingle pots. Near the middle of April ſuch old trees as are in a bad ſtate may be pruned about the roots, and have freſh earth put to them; their branches muſt be cut within three or four inches of the ſtem.

The pyracintha is an evergreen plant, raiſed from cutting, planted in this month or June; the cuttings, which are to be freſh tender twigs, are to be planted in pots of fine earth, and watered frequently, keeping them from the ſun till the following Winter, at which time a warm expoſure will cheriſh them, and prepare them to make ſtrong ſhoots in the Spring. It may alſo be raiſed by ſeeds and layers. A light gravelly ſoil, unmixed with dung, or other rich manure, is by far the beſt.

Manure of the month.

The induſtrious gardener will now be daily viſiting the kitchen and fruit garden, not only diſciplining the barren, but encouraging the weak plants. All new planted trees are to be watched, leſt ſome of them, for want of ſeaſonable help, ſhould pine and languiſh; therefore ſuch as are found in a declining ſtate muſt be ſheltered with boards and mats; for though the ſun gives life and motion to vegetable nature, yet thoſe that are weak are apt to be overpowered with its heat, and on its too frequent and ſudden returns will certainly die away. The analogy between plants and animals is ſufficiently ſhewn in this obſervation, and particularly the human race; for we frequently find, in a ſevere ſeaſon, the bodies of ſome men will be ſenſibly injured by a too ſudden approach to a large fire.

An operation muſt be performed towards the latter end of this month, which is, by ſhortening luxuriant branches in all fruit-trees, except vines, to two inches of the place from whence they ſhoot: Winter pruning, inſtead of taking from, gives vigour to a tree; but this operation now, when Nature is in its full career, gives a great damp and check to its courſe. The ſhortening luxuriant branches this month reſpects not only ſuch branches as are intended to be left to fill a void place, but alſo all vigorous ſhoots made from the place of inoculation in the nurſery, as well as the ſame made from new planted trees, eſpecially apricots and peaches, which are apt, from too much vigour, to be in very great danger. In the Summer trees of all kinds may be thus tranſplanted.

Produce of the month.

We have this month great plenty of aſparagus, and cauliflowers are now in perfection. The imperial royal Sileſia, and others ſort of cabbage lettuces, are in their prime, and very proper ſallads for this ſeaſon, mixed with young burnet, purſlain, the flowers of the ſmall naſturtium, and cucumbers.

Carrots which were ſown on hot beds in February are now very good; but thoſe remaining of the crop ſown at Michaelmas are paſt uſe; we have ſtill ſome kidney beans on hot beds. This month produces plenty of artichoaks; and peas and beans which were ſown in October may be now gathered.

Pears and apples of different ſorts ſtill remain eatable. We have now green gooſeberries for tarts,

tarts, and towards the end of the month we have ripe ſcarlet ſtrawberries in the natural ground; likewiſe the common May cherry, with ſome few of the May duke cherries againſt walls, and green apricots for tarts.

The flowers that blow this month are, columbines, tulips, peonies, double jonquils, ranuncula's, aſphodels, yellow lily, lychnis orchis, pinks, roſes, rockets, veronicas, ſtock gillyflower, ſtarflower, chalcedons, crowfoot, martagon, double catchfly, Venetian vetch, arbor judæ, bee flowers, campanellas, honeyſuckles, buglos, moly, cyanus, cytiſus, and iris's.

JUNE.

Work of the month.

PLANTS of all ſorts muſt be carefully preſerved from the violent heat of the ſun; thoſe that have been already tranſplanted muſt be moderately watered about their extreme fibres: the evening is the beſt time to do this ſort of work. You muſt not cut aſparagus after the firſt week of this month, as it will very much impoveriſh the roots. In dry weather gather ſeeds of all ſorts that are ripe, and ſpread them to dry before their huſks or pods are rubbed or beaten. This is the proper ſeaſon for diſtilling moſt ſorts of herbs. Shade your melon plants in the heat of the day, and water the alleys between the beds. Deſtroy all ſnails and weeds. Plant the late crop of kidny beans, lettuce for a late crop, and likewiſe endive. The buſineſs in the kitchen garden is little this month, except weeding and watering.

In the Fruit Garden.

The ſhoots of peaches, whoſe leaves are infected by blights, and begin to appear curled at the extremities, are to be carefully pruned off. Peaches, apricots, and plumbs, expect their Summer nailing, and likewiſe pruning, to let the ſun come to the fruit, and avoid too much confuſion.

You muſt now check the luxuriant growth of vines by a Summer pruning, wherein the branches muſt be ſhortened at the fourth or fifth bud beyond the fruit; but if a vigorous branch be wanted to fill a void place next year, it is beſt to let that particular branch alone till October. Nail or otherwiſe faſten thoſe branches of grapes which project too much, and thoſe unprofitable roots which were not before diſcovered, muſt be taken off.

In the Flower Garden.

We have this month the ſaffron crocus, a plant of great uſe as well as beauty; the leaves appear as ſoon as the flower is paſt, and remain all the Winter, which in the Spring ſhould be tied together in knots, to help the increaſe of the roots. About Midſummer they will be fit to remove or tranſplant: it chiefly delights in a chalky ground, but it will alſo proſper in a ſandy ſoil: the piſtillum contains the ſaffron uſed in medicine. The roots of the ſeveral kinds of this plant may be taken out of the ground in this month, and replanted with other bulbs; they love a light ſoil, and may be increaſed by off ſets.

This

This is a proper time to clip edgings of box, ever-green hedges, &c. eſpecially after rain.

Let your pine-apples be frequently watered, and in the heat of the day give them air; thoſe that want larger pots may be tranſplanted.

Mow graſs walks early in the morning after rain, and continue to roll your gravel walks.

Tranſplant the roots of cyclamen, ſaffron, and colchicum. After rain continue to tranſplant annuals, and ſow others to ſucceed thoſe ſown in the former months. Gather choice aquatick plants from rivers, ponds, ditches, &c. and tranſplant them into your water-tubs, where they make a pretty ſhew among other curious plants.

Such of your carnations as are ſtrong enough to bear it, may be laid, but be careful to pick off their moſt tender flower buds. Large podded carnation, which generally burſt, are now to be helped, by opening the other ſide of the pod with a fine penknife, without touching the flower leaves: earwigs, which infeſt theſe flowers, may be deſtroyed with ox-hoofs and tobacco-pipes.

Produce of the month.

Batterſea and ſugar-loaf cabbages are now fit to cut. You may draw young carrots and onions ſown in February, and ſome young parſneps. The pot-herbs in uſe the preceding month are ſtill good: and the flower-ſtems of burrage and burnet are good in cool-tankards. We have now melons of the firſt ridges.

The ſallads of this month are compoſed of purſlain, burnet, the flowers of naſturtium indi-

cum, and cabbage-lettuces of various ſorts, with ſome blanched endive and cucumbers. Artichoaks, garden-beans, peas, kidney-beans and cauliflowers are in great perfection the beginning of this month.

Till about the end of the month you may gather green gooſeberies for tarts. The ripe fruits are ſtrawberries, raſberries and currants; we have likewiſe cherries of many kinds, as the duke, white, black, and red hearts. We have alſo codlings fit for uſe, and near the end of the month ſome genettings and the maſculine apricot, peaches and nectarines, together with grapes, are now ripe in the forcing frames. Winter pears and apples are yet laſting. In the barks beds ananas or pine-apples. Obſerve to net your cherries againſt the walls, or dwarfs, to prevent their being deſtroyed by the birds.

The flowers that blow this month are, campanula, convolvulus, lychnis, ſnapdragons, amaranthus, antirrhinum, pinks, naſturtium indicum, fraxinella, jaſmines, carnations, honey-ſuckles, panſies, roſes, campions, poppies, marygolds, ſtock gilliflowers, cornflag, ſatyrions, candy-tufs, monkſhood, tube-roſes, digitalis or foxglove, and hollyhocks.

JULY.

The buſineſs of the month.

THE exerciſes in the garden are now for the moſt part gathering in the fruit of our labour beſtowed in the Winter and Spring months; for we are arrived at that happy ſeaſon which affords

affords us almoſt every variety the kitchen garden can produce. In order to preſerve a further ſupply, you muſt now ſow the laſt crop of kidney-beans, in a ſituation defended from morning froſts in Autumn. Plant cellery into drills for blanching, and continue to ſow all ſorts of ſmall ſallad herbs. On dry evenings, water ſuch plants as have lately been tranſplanted, and carefully deſtroy the weeds in every part of the garden. Give no water to your melons, which now begin to ripen. Repair your young aſparagus beds, and plant in moiſt weather freſh plants, where any have failed: water, duly in dry weather, the cucumbers brought up under hand-glaſſes; tranſplant the cellery into beds, which was ſown in May, and ſome endive, to ſucceed that planted the former month. Clear your artichoaks from weeds, and break down cloſe to the ſurface of the ground the ſtems of thoſe fit for uſe on the old ſtocks; make a bed for muſhroons as directed in February, and cover it very thin with earth. About the cloſe of the month, ſow ſpinach for Winter uſe; coleworts, carrots and onions for Spring uſe; tranſplant broccoli and cabbages for Spring uſe; and plant out cauliflowers for the Autumn crop: tranſplant all kinds of lettuce ſown laſt month; deſtroy the different ſorts of pernicious inſects, which abound this month.

In the Flower Garden.

In the vineyard carefully tie the fruit branches to the props or eſpaliers, and diligently remove all weak and fruitleſs ſhoots, either by pinching or the knife, and keep them free from weeds all the

the Summer ; the much better way in Winter is to fork up the ground inſtead of digging it. The vines are now in their full ſtrength, and puſh with the utmoſt vigour ; inſomuch that the greateſt confuſion imaginable will enſue, if they are neglected and left unpruned.

Apricots are now to be expoſed to the ſun, by taking off ſome of the leaves, that the fruit may take its proper beauty and colour ; and the latter end of the month the peaches muſt be treated in the ſame manner. If any ſtrong wood or water ſhoots puſh from the apricot or peach-tree this month, unleſs a void place wants to be filled, they ought to be entirely taken away ; but their young ſhort branches are to be carefully preſerved by nailing them to the wall.

You muſt now pay attention to the pear-tree, which, if over vigorous, muſt be properly diſciplined ; and all branches that puſh forward are ſtill to be cut off two inches. You may continue inoculation, eſpecially after wet weather.

A plentiful application of water to a peach-tree full of fruit is a great advantage to the ſwelling and ripening of the fruit. The fruit-trees that are in pots muſt be now daily watered, otherwiſe their fruit will drop off : but with this care they will perform wonders. Fruit near the ground (if not too near) have a double advantage, and may be expected to be large and firſt ripe.

Snails, waſps, flies, earwigs, &c. being this month the great enemies to wall-fruit, particularly nectarines, the moſt effectual methods for their deſtruction are to be put in practice. In this and the preceding month, weeding ought to be

be diligently minded, that the borders of fruit-trees, &c. and alleys may be kept clean.

Lay carnations as they gather ſtrength, and often refreſh them with water. Sow tulip-ſeeds, which are now ripe, in caſes of light earth; ſow alſo ſome anemony ſeeds and annuals in edgings, to blow in September.

Continue to make cuttings of the torch-thiſtle, Indian fig, hythimals, ſedums, and other ſucculent plants. Raiſe myrtles of cuttings, according to the directions given in May. Lay down young ſhoots of the Arabian jeſſamine. Set coffee-tree berries, which are now ripe; and the fruit of the ananas. Roll you gravel walks well after rain.

In the Fruit Garden.

The management of the vine being a very principal concern this month, we ſhall ſay ſomething farther relating to it.

It has been obſerved, that, from a vigorous ſhoot of a vine already once pruned, there will puſh again ſeveral Midſummer ſhoots weaker than the former, from the firſt, ſecond, and third bud, towards the extremity; which ſhoots are to be taken off, only remembering that it is proper to ſpare the laſt of ſuch ſhoots, ſo far as to leave one bud upon it, from whence nature may exert itſelf a third time in Autumn: for if thoſe ſhoots were all entirely removed, the vine would puſh at thoſe bearing buds which lie at the bottom of the ſhoots; the effect whereof would be either the want of fruit at thoſe places next year, or a neceſſity of pruning the branch ſhorter than was intended, or is covenient in the Winter.

Grapes

Grapes being expoſed to the ſun this month will not receive any danger; for though the vines appear thin of leaves and wood, that fault will be recovered by the ſhoots in Autumn.

In order to deſtroy waſps and other inſects, which now devour the peaches, apricots, and other fruits, place phials of honey and ale near the trees, and you will ſoon catch a large quantity of them. Renew the bottles once every week. Cover your grapes with nets, to prevent the birds getting at them.

Water, having a large quantity of walnut tree leaves ſteeped in it a fortnight or three weeks, being poured on the ground, will deſtroy worms, and make them quit their holes; and they may be taken by a candle and lanthorn in a Summer's evening after rain.

In a dry ſeaſon, if you take lime and brine, and pot-aſhes decocted in water, and caſt it on your graſs-plats, it will not only deſtroy the worms, but improve the graſs; and a decoction of tobacco refuſe will deſtroy worms in gravel walks.

Produce of the month.

The ſallads for this month are cabbage-lettuces, purſlane, tarragon, burnet, young onions, cucumbers, flowers of the naſturtium indicum, and ſome endive blanched.

We have now great plenty of melons, artichoaks, cauliflowers, cabbages, young carrots, turneps and beet, peas, garden beans and kidney-beans. And alſo all ſorts of herbs for the kitchen; which are now very good, eſpecially if the gardener has remembered from time to time to cut them down for ſhooting afreſh.

Small

Small cucumbers for pickling are in their prime ; and this is the beſt month for the pickling of them.

The different fruits we have this month are, gooſeberries, currants, raſberries, cherries, early plums, jenetting and codling apples, apricots, peaches and nectarines ; and towards the end of the month we have figs and ſome of the July grapes. The peaches are good for little yet, but the apricots are in full perfection.

There is one ſort among peaches peculiar, called the bourdine, which ſucceeds very well in a ſtandard, as the apricot ; and if it be ſituated in a warm place, and not carried up too high in the ſtem, will bear very well : this and the ſtandard apricot-trees require only the ſame management with orchard fruit-trees. The wall peaches muſt be treated with a great deal of care, for the quantity and excellence of their fruit will be in proportion. Theſe kinds of peaches, like the ſeveral apricots, are all varieties from one original ſtock or kind : they have been raiſed by planting the ſtones of fine peaches, for theſe trees vary from ſeed like flowers. The firſt ſtock may be from a nurſery, but it will be worth while to raiſe new kinds this way afterwards. The peaches which ripen in the beginning of Auguſt ſhould be choſen for this purpoſe, and ſuch as have a thin ſkin, a yellowiſh, juicy fleſh, and a ſmall ſtone, ſticking to the fleſh, not parting from it. Some of the choiceſt of theſe ſhould hang on the tree till they drop off, and the ſtones of theſe ſhould be planted in a ſmall bed of the nurſery ſix weeks afterwards. The young plants are to be managed in the ſame manner as tender ſhrubs or plants of other kinds,

and

and at two years growth are to be planted in the places deſigned for them, with the ſame care, and in the very ſame manner, as directed for apricots. They muſt remain in their new places till they have borne fruit ; and after the ſecond year of fruiting their value will be diſcovered ; thoſe that are bad muſt be pulled up, and the fine ones propagated by inoculating them on ſtocks in the general manner. The beſt ſtocks for the early kinds are the almond, and for the others the muſcle plum. Theſe ſtocks are to be raiſed from the ſtone, and trees planted at one year old, to prevent their ſending down great top roots ; and after two years more growth in the nurſery they will be fit for this purpoſe. When the trees are to be brought to the places where they are to ſtand, they muſt be take up with care early in Autumn, the roots trimmed, the trees carefully planted, and all the branches nailed ſlightly to the wall : they are to be defended during the Winter, by laying turfs at their roots the wrong ſide upwards.

The flowers that blow this month are, baſils, geraniums, gladiolus, clematis, or virgin's bower, African marygolds, thlaſpi creticum, veronica, lark-heels, lupines, ſcabious, marvel of Peru, lobels, catch-flies, lillies of all ſorts, apples of love, marygolds, female balſams, dittany, paſſion flower, candinal-flower, ſun-flower, and valerian.

AUGUST.

AUGUST.

Work to be done in the Kitchen Garden.

AS the firſt part of this month is generally hot and dry, frequent waterings are neceſſary, which muſt be carefully attended to, as well as the deſtruction of vermin.

About the middle of the month, or towards the latter end, ſow ſome common cabbage-lettuce, and brown Dutch lettuce, to be planted under frames, to come up early in the Spring; alſo cos and Sileſia lettuces. Sow cauliflower ſeed for the early crop under bell or hand-glaſſes. Weed your beds of coleworts ſown laſt month; if the plants are too thick, draw ſome of them out and tranſplant them. Sow your early Batterſea and Yorkſhire cabbage ſeed. Earth up your cellery in dry weather; tie up your full grown endive, manage your artichoaks as before directed; gather your cucumbers for pickling; ſow turneps for a latter crop; hough your ſpinach ſown laſt month, and gather your ſeeds as before directed. In moiſt weather cut off the flowering branches of thoſe aromatic plants which are paſt flowering, that they may make new ſhoots before Winter.

In the Fruit Garden.

We are now to review the laying peaches and apricots open to the ſun to perfect their ripening. Continue the pruning of thoſe vines that were neglected the laſt month, and keep the

fruit as close to the wall as possible; but the grapes are now to be discreetly shaded with leaves, and sufficiently defended against the cold nights, at the latter end of the month.

In gathering apricots this and the other months, great care is to be used that you do not break the branch whereon they grow; because from thence we are to expect another bearing branch the succeeding year.

The borders are now to be reviewed and kept clean; and at the latter end of this month give them a stirring, the better to receive the autumnal rains.

Give the ever-green hedges and pyramids a second clipping, which in a wet season will be much wanted. Make layers of all sorts of shrubs and trees, which remain abroad all Winter, observing always to lay down the most tender shoots.

There being little more to be done this month in the fruit garden than what has been directed in the former months, we shall proceed to the works.

In the Flower Garden.

The tulip-tree is a plant of the wood, and should be set among such trees as are designed for groves, where it will rise to a great height; its leaves are somewhat like those of the maple, and the flowers have some resemblance of a tulip, which gave name to the tree. The seeds of this tree, which are brought from Virginia, are to be sown in pots this month, and sheltered all the Winter, and the Spring following they will come up. The young plants may be transplanted into pots, at two years growth, and must have shelter in the Winter for

for the firſt nine years at leaſt, till they have gathered ſtrength enough to reſiſt the ſeverity of our froſts, and they may then be planted in the natural ground ; a ſandy ſoil is the beſt. This time of ſowing of ſeeds muſt be obſerved, becauſe experience has ſhewn they are not to be raiſed in the Spring.

The buſhous violet, or ſnow-drop, is reckoned amongſt the daffodils It is one of the moſt early flowers in the Spring, generally blowing in January.

The hyacinth will bear the ſeverity of our froſts, and blows early in the Spring ; it is increaſed from off ſets of the roots, planted the latter end of this month, or in September, in beds of ſandy ſoil. The tuberous hyacinth is a plant of an aſpiring head, and a very tender nature ; the roots of it muſt be taken up in April, and being carefully parted, are to be replanted in pots of prepared earth, and have the aſſiſtance of a hot-bed like other tender ſhrubs. In September you may take up the bulbs of this plant, and preſerve them in dry ſand.

Lillies are propagated by parting their roots when the leaves are fallen about July, or Auguſt, and delight in an open ſandy ſoil : they are very proper flowers for the middle of borders in great gardens, or to be planted under hedges in long walks ; and the ſtriped white lilly is ſo great a rarity as to deſerve place in the niceſt garden. The orange lilly is very ornamental in gardens, and an agreeable companion for the white lilly. The lilly of the valley delights in ſhady ground, and is eaſily increaſed from plants.

Produce of the month.

We have now ſallads compoſed of cabbage lettuces, creſſes, muſtard, cucumbers, radiſh, with a mixture of tarragon. We have horſe-radiſh, plenty of cucumbers for pickling, all ſorts of kitchen herbs, and towards the end we cut cellery.

There are artichoaks, cauliflowers, beans, peas, and kidney-beans cabbages and cabbage ſprouts, beets, carrots and turneps, but other boiling roots muſt not yet be uſed. We have likewiſe muſk-melons in great abundance.

Although the preſent produce is very extenſive, yet we have ſeveral roots and herbs of the laſt year, ſuch as rocambole, ſhalots, onions, garlick, &c.

We have variety of fruit this month, ſuch as apricots, peaches, and nectarines; ſeveral ſorts of grapes, figs, Summer pears and apples, mulberries, and ſome filberts. Morella cherries are now ripe, and plums of various kinds. Gooſeberries, raſberries, and currants are ſtill very good.

The flowers that blow this month, are colchicum, Autumnal hyacinths, belvederes, ranunculas, cyclamens, amaranthus, ſtarwort, nigella monthly roſes, hellebore, jeſſamines, and the mallow tree.

SEPTEMBER.

Buſineſs of this month.

MAKE plantations of Dutch and brown lettuce to ſtand the Winter. Plant out cauliflowers ſown the laſt month, upon old cucumber or melon beds, and ſow Spaniſh radiſh ſpinach. In dry weather hough and clean turneps, weed the beds of ſpinach, onions, carrots, cauliflowers, cabbage plants, and coleworts.

About the middle of the month you may ſafely tranſplant moſt ſorts of annual aromatic plants. Continue to ſow ſmall ſallad herbs; gather all ſeeds as they ripen, and preſerve them as before directed. Blanch endive, tranſplant lettuces, cut down the haulm of aſparagus, and be careful to dung and hough the beds. Preſerve your young cauliflower plants from rain, prepare the ground of your Summer crops for freſh ones, or trench it up to lie till Spring free from all weeds.

Near the end of the month plant ſome beans and early peas in warm borders. Let your latter crop of cellery be tranſplanted into drills, and the laſt crop of broccoli where it is to continue. Seeds in general muſt be dried in the ſun before they are laid up, to preſerve them properly for future uſes.

In the Fruit Garden.

Gather ſuch fruits as are ripe upon the trees, and others that are full grown, and in good condition to be laid up for the uſe of the following months. Such pears or apples as are fit to gather will eaſily quit the tree; therefore uſe no violence if they do not come off eaſy. A room where very little air comes is the beſt place to keep them for Winter uſe.

Before you eat Winter pears, let them be warmed by the fire as you do red port, which will very much heighten their flavour.

You may ſtill inoculate pears; but a vegetative nature has now made a conſiderable ſtop in its circulation of ſap, and the growth of moſt trees, and all kinds of delicious fruits are now ripe, we have little to do in this and the former month, but to collect and enjoy what the gardens ſo abundantly produce.

Be careful to preſerve your fruit from waſps; earwigs, and ants.

In the Flower Garden.

Let your tall flowers be ſtaked to prevent injury from the winds, which at this time blow hard. Sow the ſeeds of bulbous rooted plants, as tulips, ranunculus, crocus, &c.

Take off your carnation layers; tranſplant flowering ſhrubs of all ſorts, and make layers of them, ſuch as the honey-ſuckle, jeſſamine, virgin's bower, Virginian dogwood, periwinkle, &c. Plant your jonquil roots, and let them ſtand two or thee years in the ſame place. Sow ſtock-gilliflowers

liflowers for a fupply in the Spring. We may yet plant ever-greens, fuch as hollies, yews, box, &c. if they rife with good roots, but the beft feafon is Auguft. Sow poppies, larkfpurs, annual ftocks, candy-tufts, and Venus's looking-glafs, to bloffom early in the Spring.

Manure of the Month.

As the tulips is a beautiful flower, and requires particular care in its cultivation, we fhould defcribe it at large. It is propagated as follows: the ftems of this flower being left remaining upon the root, will perfect the feeds about July, which will be fit to gather when the feed-veffels begin to burft; then they are to be cut clofe to the ground in a dry day, and laid in fome dry place till September, which is the moft proper feafon for fowing them.

They love a foil compofed of fand and natural black earth, or the rubbifh of old buildings and natural earth, but may be fown in a natural foil, and the firft year their roots will be very fmall, but after their fecond appearance above ground, they may be taken from the pots or cafes they were fown in, and put in a bed of natural fandy foil well fifted, where the thicknefs of half an inch of the fame earth fhould be fpread over them; and, thus they are to continue, without any other culture than adding half an inch of the earth for the covering every year, till they begin to blow, which will be in five or fix years time. In this manner tulip feeds are to be fown every year for new varieties.

It is good to plant all the forward blowers in a bed together; and of the late flowering tulips

to

to place the talleſt ſorts in the middle line of the bed, with two rows of the ſhorteſt blowers on each ſide. When they are planted in this month, they need no ſhelter till the March, that the flower-buds appear, and then they ought to be defended from blights with mats or painted cloth ſtrained upon hoops; which covering will ſerve alſo for ſheltering the flowers from the heat of the ſun and rain, when they are blown.

There are two different claſſes of tulips; the præcore, or early blowers, and the ſerotine, or later blowers: and theſe are diſtinguiſhed by their double and ſingle flowers. They have alſo different denominations from their colours and ſtature; as bagats, which are the talleſt flowers, commonly purple and white marbled; agates, which grow ſhorter than the other, whoſe flowers are veined with two colours; and beazarts, which have four colours, tending to yellow and reds of different kinds.

The cultivation of violets in gardens is increaſed by tranſplan ing their runners either in this month or in February; they will take root of themſelves at every joint, without the aſſiſtance of any art. They ſhould be planted in the moſt rural part of the garden, or near the edges of garden beds; a binding ſoil and ſhady ſituation is by far the beſt.

Annuals ſtocks are ſown in ſpots, or may be uſed for edgings, their flowers being of a pink colour. You may increaſe daiſies by parting their roots either in Spring or Autumn, they make pretty edgings for flower beds.

The honeyſuckle or woodbine is a twining plant, proper to be placed about trees in avenues, to intermix its bloſſoms among their branches; or it may be trained up into a ſtandard as a headed plant

plant in the moſt remote part of the garden. Theſe plants, and indeed all flowering ſhrubs, are beſt managed as headed plants, and planted in pots, by which means, when in flower, they may be agreeably mixed with ever-greens, and removed as ſoon as the bloſſom is over, to make room for others. They are raiſed from layers or cuttings, ordered like thoſe of the jeſſamine, in this month or October: they love ſhade, and are the natural inhabitants of the woods, where they perfume the air with their fragrant odours.

The Virginia myrtle, which bears berries, from which is drawn the green wax whereof candles are made, is propagated by ſowing the berries in pots of black ſandy earth, in this month, being kept continually moiſt.

The box-tree is valuable for its wood, and for the continued verdure of its leaves. This plant will make delightful hedges in gardens: but it delights in chalky mountains, where it will grow much quicker than in our gardens. It is raiſed by layers, ſlips, or ſeeds; and the beſt time to make layers or ſlips of it is in this month; the ſeeds of it may be ſown ſo ſoon as ripe, or laid in ſand during the Winter to be ſown the Spring following.

Produce of the Month.

The ſallads of this months are compoſed of creſſes, radiſhes, chervil, young onions, burnet, tarragon, ſome blanched cellery and endive, and lettuce.

There are yet melons and cucumbers, plenty of muſhroons upon beds and in paſture grounds, young garden peas and beans, and ſome kidney-

ney-beans. Cabbages and ſprouts of cabbages in great abundance; carrots, turneps, ſkirrets, beets, onions, ſhalots, rocambole, and horſe-radiſh.

We have in this month good flowers and ſuckers from artichoaks planted in Spring; and in our kitchen garden we have ſtill plenty of cauliflowers.

The fruit-garden affords us this month grapes, peaches, and nectarians in great abundance. The old Newington peach, which is ſo much valued, is now in its greateſt perfection. There are blue and white figs, blue and white perdigran plums, the Summer bon cretien, bergamot, and other ſorts of pears. Some apples, walnuts, and filberds.

The method of preſerving ripe grapes till Chriſtmas is thus: let them be gathered when they are full ripe, and dry; cut the branches off with three or four joints of the branch, and wax each end of the joint with ſealing wax: then hang them in a room where there is generally a fire. Melons that are full grown and not ripe, will ripen, if put in a net and hung up in a warm room.

The flowers that blow this month are, love-apples, moly, colchicums, Guernſey lilies, ſunflowers, hollyhocks, tube-roſes, double violets, ſaffron-crocus, poppies, ſtock-gilliflowers, carnations, Indian pinks, Æthiopic apples, and muſk-roſes.

OCTO-

OCTOBER.

Buſineſs of the Month.

IT is now time to make plantations of lettuce for Winter uſe: tranſplant cabbages and cauliflower plants; take up thoſe cauliflower plants which begin to flower, tie their leaves together, and bury their roots and ſtalks in ſand in a cellar, or ſome cool place. Cut artichoaks with long ſtalks, and preſerve them in the houſe by ſetting their ſtalks in ſand. Dreſs and earth up ſuch artichoaks as have done blowing, and continue to earth up cellery for blanching. Draw up ſome full grown endive, to plant down on the ſides of the ridges to blanch. Tranſplant lettuces upon warm borders, and keep your ſpinach, carrots, onions, &c. ſown in July and Auguſt, clean from weeds. Plant beans and peas at the beginning and end of this month upon dry grounds, and in warm ſituations. Tranſplant cauliflower plants into the places where they are to abide the Winter. Break down the inner leaves of your cauliflowers ſown in May, to defend them from froſt or wet, and earth up the ſtems of your broccoli plants: make ſome moderate hot beds to plant mint and tanſey upon. Guard your muſhroon-beds from wet and froſt: ſpread ſome rotten dung on the beds of ſeedling aſparagus plants, and make hot beds for aſparagus, if required at table in December. Lay on the quarters of the garden the dung of your melons and cucumber beds, alſo the dung of the lay-ſtall.

Sow

Sow kidney-beans in baskets under a ſouth-wall, to be afterwards forwarded by hot-beds, for early beans: and hotſpur-peas, and Spaniſh beans, in ſome well expoſed border under a wall or a hedge. Sow alſo radiſhes in ſome warm place to draw early in the Spring; and creſſes, let uce, muſtard, ſpinach, &c. upon a decayed hot-bed: put likewiſe ſome roots of mint upon a gentle hot-bed for Winter ſallads.

In the Fruit Garden.

This is the moſt proper ſeaſon for planting of peaches, apricots, and other fruit-trees, which is beſt done in untryed earth, nothing being more prejudical to them than dung.

If the weather ſhould be moiſt or wet this month, the borders muſt be raiſed, and the trees planted high; for it is certain death to peaches and apricots to ſtand where water ſtagnates in the Winter. Vines ſhould be planted againſt walls ſeven or eight feet aſunder. The beſt ſoil for vines is the rubbiſh of old buildings, ſea-coal aſhes, or drift ſand with rotten dung, mixed with an equal quantity of natural earth.

Preſerve a good ſtick of untryed earth to be ready, on all occaſions, for fruits-tree, ever-greens and flowers.

In the Flower Garden.

Continue to tranſplant and lay roſes and ſuch like flowering ſhrubs; and to plant the cuttings of jeſſamines and honeyſuckles in ſhady borders: Sow the berries of yew, holly, and other ever-greens, prepared in earth or ſand, and if the

ſeaſon

ſeaſon be mild, theſe kinds of plants may be pruned.

Let the time of watering your houſed greens be in the morning, when the ſun ſhines upon them; but after the middle of the month you are to give no watering to your tender ſucculent plants. Be careful to keep your walks clean from autumnal leaves.

Manure of the Month.

With reſpects to ſoils for plantation of fruit-trees, it has been obſerved that vines thrive beſt in dry light ground: that peaches, plums and cherries delight in a ſandy loam; and figs, pears and apples agree with all ſorts of ſoils, provided the ground be near three feet deep. For the diſtance to be obſerved in planting of fruit trees, a wall of ſeven or eight feet high will require the trees to be planted about ten or twelve feet aſunder; and if the walls be ten feet high, eight or ten feet aſunder; but in either caſe the peach and nectarine ſhould be planted at a much leſs diſtance than the apricot, plum or cherry.

Before you begin your plantations be careful that the ground is properly enriched for that purpoſe; the border ſhould be dug two feet deep the whole length of it, and four or ſix feet over, filling it up with a ſandy loam half a foot higher than the level; be careful to preſerve ſome of the fineſt mould near the top, to plant your trees in. Experience tells us that untryed earth dug from a waſte or common fed with cattle is the moſt agreeable for all manner of young fruit-trees.

Produce of the month.

The herbs which form ſallad this month are creſſes, chervil, muſtard, radiſh, turnep, rape, ſpinach, lettuce, burnet, tarragon, young onions, blanched cellery, and endive.

For kitchen uſe we have now parſley, beets, and all ſorts of aromatic herbs: likewiſe cauliflowers, artichoaks, peas and beans, and kidney beans ſown in July; and we have yet cucumbers, and ſome melons, with plenty of muſhrooms.

This month produces the following roots for boiling; carrots, turneps, parſnips, potatoes, ſkirrets, ſcorzonera, and beets. To uſe raw, we have onions, garlick, ſhalots, and other roots. Likewiſe ſome chardons.

The fruits of this month are, ſome of the late peaches and plums, grapes, figs, and mulberries, with ſome filberds and walnuts, and great variety of pears and apples.

The flowers that blow this month are, panſies, amomus, heliotropes, arbutus, ſingle wallflowers, carnations, ſtock-gilliflowers, double violets, and the ſaffron crocus.

NOVEMBER.

Buſineſs of the month.

DRAW up the roots of carrots, parſnips, potatoes, beets, large rooted parſley, &c. lay them in ſand, defended from wet and froſt, pick

pick off decayed leaves from your cauliflower plants, and draw earth up to the ſtems of thoſe under bell and hand glaſſes. Weed your ſpinach, onions, and other crops ſown in July and Auguſt.

Sow peas and beans to ſucceed thoſe of the former month, and draw up earth to the ſtems of thoſe which are come up. If the weather is mild your cauliflowers and lettuce plants that are in frames, or under glaſſes, may have ſome air given them. The ground between your artichoaks muſt be trenched, laying a large ridge of earth over the roots, equal on their ſides and tops.

In the Fruit Garden.

It is now proper time to begin pruning pears and plums, eſpecially the dwarfs and thoſe on the eſpaliers; the vine, of all other works, is the moſt material to be obſerved this month. Lay down the branches, particularly ſuch as you would have fruit upon the following year, to be ſet growing in pots upon a table at great entertainments. The branches for this purpoſe muſt be ſhoots of the ſame year, and ſo drawn thro' the hole at the bottom of a garden pot, that when it is filled with earth there may be a reaſonable number of eyes or buds above ground. Eight or nine bunches of grapes will grow on a ſtrong branch.

Nurſeries for ſtocks of all ſorts of fruit-trees may be made this and the preceding month, as well as in February and March. You cannot eaſily chuſe or make the ſoil of your nurſery for wall-trees too rich, becauſe ſtocks ſhould be

vigorous. Plant the beſt plum-ſuckers, or ſow the ſtones and kernels whereon to raiſe peaches and apricots, pears and apples.

Trees that are unhealthy may be refreſhed by applying new mould to their roots. Let your moſt delicate ſtone fruit be covered, to defend them from the ſeverity of the piercing winds. In planting and ſowing it is a general rule to ſow moderately dry, and plant moiſt.

Nail the tender branches of fig-trees cloſe to the wall, before the great froſts come on. If the weather be open continue to plant and remove fruit trees.

In the Flower Garden.

Preſerve heaps of earth for your ſerveral ſorts of flowers, and make the proper mixtures for exotics; obſerving that where the ground is too ſtiff it may be brought to a ſtate of loam, by adding to it a ſufficient quantity of drift or ſea-ſand. Tie up all trees and ſhrubs to ſtakes, otherwiſe, by their being looſe and at liberty, they will be deſtroyed by the winds. Cut down the ſtalks of tall blowing flowers that have done bloſſoming, within three inches of the root. Roſes, jeſſamines and honeyſuckles may be yet tranſplanted if the weather is open.

Lay down your auricula pots upon their ſides, the plants towards the ſun, to drain them from moiſture, and preſerve them from froſts. Give your feeding bulbs daily airings, and keep them ſheltered from the froſt. Plant hyacinths, and jonquils, and plunge them into hot-beds, to bloſſom about Chriſtmas.

Manure

Manure of the Month.

Plant currants, gooſeberries, apricots, cherries, early peaches, nectaries, &c. againſt a paling of five feet high, made after the following manner: the ſtakes to ſupport this paling muſt be ſet about four feet diſtance from each other; to which you muſt nail whole deal boards of twelve feet long, well jointed to one another, and ploughed on the edge, ſo as to ſet in laths, that thereby the ſteam of the dung, which is to lie at the back, may not get among the plants; becauſe wherever ſuch ſteam comes it will cauſe mildews. The deals are to be an inch in thickneſs; for if they are not quite ſo thick, the trees will be apt to be ſcorched upon the firſt application of the firſt dung; and if they are thicker, the artificial heat applied to their backs, upon the time it begins to decline, will not be powerful enough to warm them thorough, and then the dung muſt be often refreſhed.

When the pailing is up, you are to mark out a border on the ſouth ſide of it about four feet wide; and on the outſide of the border, faſten to the ground in a ſtraight line, ſome ſcantlings of wood about four inches thick, to reſt glaſs-lights upon, which are to ſlope back to the pailing for ſhelting the fruit, as occaſion requires; between theſe glaſs-lights muſt be bars cut out of whole deal, about four inches wide, ſo made, that the glaſs-lights may reſt in them: theſe bars muſt always remain fixed, as in a frame for a hot-bed.

At the end of this frame moſt be a door ſhaped to the profile of the frame, to be opened, either the one or the other, as the wind happens to blow, always obſerving that the door be opened on that ſide only which is freeſt from the air.

If a frame of this nature be made in the Summer ſeaſon, you may plant it the ſame Summer with fruit-trees, and the trees will take very good root before Winter, and be ſo well ſtored with ſap againſt the following Spring, as to ſhew no ſign of their removal, but bear extremely. Beſides, by this Summer planting, the trees ſeldom or never throw away their ſtrength in Autumn ſhoots, or make any attempt towards it, till September and October, when the froſts prevent their deſign.

The trees planted muſt have time allowed for the juices to digeſt, before you begin to force them: therefore the hot dung is not to be applied to the back of the paling before November. About the middle of this month, or towards the end, is time enough to bring ripe cherries in February; at the ſame time likewiſe heat may be uſed for apricots, ſo as to make the maſculine apricots as large in February as duke cherries, and ripen them the beginning of April. Apricots, tho' forced in the uncommon ſeaſon, will thrive and proſper well for many years; but our cheeries do not bear this alteration in nature ſo well. Some forward ſorts of plums will ripen about the end of April; and the Anne-peach at the ſame time. The early nectarine being thus forced, would ripen with the maſculine apricot. And as to gooſeberries, we may have green fruit

fit

fit for tarts in January and February ; and ripe gooſeberries and currants in March and April.

In this frame you might alſo plant a row or two of ſtrawberries, which would ripen at the end of February or beginning of March. And amongſt the fruit you may mix here and there a monthly roſe-tree ; and have a border planted with early tulips, hyacinths, jonquils, narciſſus, and other flowers, which by the forcing heats would make a kind of Summer all the Winter.

The trees planted in theſe frames muſt be cloſe to the paling, contrary to the methods of planting again walls ; for the roots will run under the pales, and draw nouriſhment equally from the earth about them, but with walls it is otherwiſe. The trees need not be planted at a greater diſtance than four or five feet : and thoſe that have ſtood ſeven or eight years againſt walls, may be removed to theſe forcing frames without any danger : As to pruning theſe trees, the ſame method is to be followed as recommended for other trees in February ; but the ſeaſon for doing it is not the ſame ; for in the forcing frames our Spring begins in November, but in the other caſe it does not begin till the end of January or February. The trees are to be pruned and nailed to the pales (every branch as cloſe to the pales as may be) about a week before the forcing heat is applied ; and all the glaſſes, to be put up as ſoon as they are pruned.

The hot dung to be laid to the back of the pales, ought to be toſſed up in an heap ſome days before it is uſed, that it may yield a heat

every

every where alike: and when it is fit to be applied to the pales, you muſt lay it four feet wide at the baſe; and let it ſlope to two feet at the top, the heighth in all being at firſt within four inches of the top of the pales, and in ſix weeks time it will ſink to about three feet, when you are to apply freſh dung. The firſt heat does little more than ſwell the buds of the trees, and bring them to a green colour; the ſecond forwards their bloſſoming, and the third brings the fruit to maturity. It helps very much the bloſſoming of the trees, to cover them with the glaſs-lights, when froſt happens: but no opportunity of ſhowers ſhould be denied them, if the weather be tolerable mild, till the buds begin to ſtir; after that, the glaſſes are to remain over them conſtantly till the ſun begins to have ſome power. When the ſun ſhines warm, and the wind is not too ſharp, give air at the front of your frame; and if this does not happen during a fortnight's ſpace, then give air at the end, and put up mats or canvas to correct the winds, and cauſe the air to circulate in the frames.

About three changes of dung will ſuffice to bring your cherries to ripeneſs in February, allowing each parcel to remain a month at the back of the pales: but if April proves cold, the forcing heat is to be continued till May, for plums, peaches, nectarines and apricots. Where theſe forcing frames are kept, the dung, when it has loſt its heat, may be laid in heaps to rot for the improvement of land.

Produce

Produce of the Month.

The ſallads of this month are compoſed from the ſmall herbs on the hot-bed, with burnet, cabbage-lettuce, cellery, and endive blanched, and young onions. If the cucumber plants that were ſown in July have been properly guarded from rain and froſts, they will produce fruit this month. We have cauliflowers and ſome artichoaks in the greenhouſe.

The roots we have this month are, carrots, parſneps, turneps, beets, ſkirrets, horſe-radiſh, potatoes, onions, ſhalots and rocambole. The herbs and plants for boiling are, cabbages and the ſpinach.

The dried herbs are, mint, ſweet marjoram, and marygold flowers. The pot-herbs are cellery, parſley, ſorrel, thyme, ſavory, beet-leaves, and clary.

Apples and pears of ſeveral ſorts are now ripe, ſuch as the St. Germain, la chaſſeree, the ambret, colmar, criſſan, and ſwain's egg; there are walnuts, medlars, and ſervices. We have likewiſe ſome grapes and figs.

The flowers that blow this month are, ſingle anemonies, gentianella, polyanthus, ſtock gilliflower, and double violets. We have likewiſe ſome carnations in the green houſe.

DECEMBER.

Buſineſs of the Kitchen Garden.

SAVOYS and cabbages which are deſigned for ſeed, muſt be hung up by their ſtalks in a dry room for a week or ten days: after which plant them down in a warm border almoſt over their head. Plant each kind at a diſtance, and cover them with dry ſtraw or peas-haulm if the weather be froſty.

Sow radiſhes, carrots and lettuce on warm borders for an early crop. Carry dung into the quarters, and ſpread it on the ground; trench up the quarters, laying the earth in ridges, that it may be mellowed by the froſt. In mild weather uncover your cauliflower plants under frames every day. Earth up cellery as near the tops of the plants as poſſible.

On the approach of hard froſt, cover cellery and endive with fern or ſtraw. If the weather be mild, ſow early peas in warm borders about the middle of the month, and in froſtly weather cover them with reeds or ſtraw.

In the Fruit Garden.

The principal buſineſs to done in the fruit garden this month is the pruning of vines, and thoſe other works which were left unfiniſhed the preceding month.

About the latter end of the month prune and rail wall fruit trees and ſtandards that are hardy;

dy ; and you may yet ſet moſt ſort of kernel ſtones.

Moſt ſort of hardy trees, that ſhed their leaves in the Winter, may be removed or planted.

You muſt be attentive to fruit trees in orchards, and ſuch branches as make confuſion muſt be taken away. Cover every conſiderable wound with a mixture of bees-wax, roſin, and tar, in equal quantities, and of tallow about half the quantity of any of the others ; which are to be melted together in an earthen veſſel well glazed, and with a painting bruſh dipped into it, the wound is to be covered over.

You muſt now be careful to deſtroy ſnails, which harbour in moſt parts of the garden, but particularly behind the ſtems of wall trees, where they will be found in great abundance.

In the Flower Garden.

Provide ſhelter for your tender flowers in the green houſe, ſuch as choice anemonies and the ranunculus. Take off dead and rotten leaves from your exotic plants. Let your green-houſe plants have but little water ; and be ſure to obſerve this rule, that aloes, euphorbiums, Indian figs, torch-thiſtles, and ſedums, have not any water given them till the latter end of March.

You muſt not be over haſty in warming your green houſe with artificial hearts, but admit as much ſun as poſſible, becauſe as that is a natural heat, they will be better cheriſhed. The principal matter is to keep out froſts, which may be done by covering the windows of your greenhouſe with mats.

As no plant can live without air, it is adviſeable, that at the end of your green-houſe there ſhould be an anti-chamber, through which you are to paſs to the houſe; which chamber will have freſh air from abroad every time you go into it, and on opening the door of it into the green houſe, the air will there mix with the other that has been pent up, and impregnate it with new parts, by which means it will contribute to the vegetation of plants, without affecting them too ſuddenly.

The weather being generally ſevere at the cloſe of this month, thoſe gentlemen that have water-works in their gardens muſt cover their fountain pipes, and the ſtone of thoſe works, with ſtable litter, to preſerve them from froſts, which will occaſion the ſtone to crack, and conſequently deſtroy it.

This is the proper time to turn up gravel walks into ridges, in order to deſtroy the weeds; in which manner they are to continue till April, when they muſt be laid afreſh.

This method of managing our walks at this time of the year, is by many objected againſt; becauſe, beſides being deprived of the benefit of them all the Winter, it doth not anſwer the end of the practice, but rather the contrary. Turning the walks up in ridges kills indeed the preſent weeds; but for the very ſame reaſon that the huſbandman ſtirs and tills his land, to enrich and fertilize it, ſo this turning and ridging of walks is a real tillage, and adds fertility to them, to the future increaſe of graſs and weeds.

This conſidered, if conſtant rolling, after rains and froſt will not effectually kill the moſs and weeds

weeds of your gravel walks, the beſt way if they muſt be turned, is to ſtay till April, and then turn and lay them down at the ſame time. But the better way is, inſtead of turning the gravel-walks, to run the top over with a Dutch hough, in the ſpring of the year, after a froſt; then let them lie ſome time before they are raked and rolled, and that will kill the moſs and weeds, or where the walks are very large, a garden harrow will anſwer the ſame end.

Work of the month.

A very principal part of the buſineſs of this month conſiſts in its being eſteemed a greater excellency to produce a ſingle cucumber or cherry at Chriſtmaſs, than to bring to maturity loads of them in their natural ſeaſon.

In December and January we may have ſome green peas, by the help of the forcing frame mentioned in the preceding month, or otherwiſe by the aſſiſtance of hot-beds; and we may have cucumbers fit for the table every month in the year: the common natural cucumbers laſt tolerable good till the end of Auguſt, tho' they run upon the ground; and if we take care to let ſome cucumber vines run up ſticks againſt walls, they will have very fair fruit till the end of October, but eſpecially if they are covered in the night from froſts; and in November and December a gardener among his cucumber plants, of various ages and degrees of growth, may have fruit ſet ſo as to be brought to perfection, and cut down on New-year's-day.

The time for ſowing cucumbers for Winter ripening are to be thus obſerved; begin to ſow ſeed on the natural ground, to tranſplant them upon a moderate hot-bed the latter end of July, and continue your ſowing every week till the latter end of Auguſt; and thoſe plants that are ſown about the latter end of Auguſt, will begin to ſhew fruit the beginning of October: in September, ſow three times, viz. about the ninth, the nineteenth, and the twenty-fifth days of that month; and thoſe ſown on the laſt of thoſe days, will bear fruit fit to be cut the firſt of January: then you may ſow in October, and have a good crop in February, with good management.

To bring cherries in December, it has been practiſed to pull off all the bloſſoms of a tree as ſoon as they were budding out in the Spring, and the tree kept very dry from rains all the Summer; and about the end of July, or in Auguſt, giving it gentle waterings, by little and little, about the end of September it has been in full bloſſom, when glaſſes are to be kept over it; and at the end of October, if the weather is cold, or beginning of November, dung is to be applied at the back of the pales, and renewed as directed in November for your forcing frames. The morello cherry, which is apt to come late, will hold a long time upon the tree, even till the end of October; and if ſuch trees were ſheltered from froſts with mats or glaſſes, there is no doubt but the fruit will remain a month longer upon the tree, and perhaps till December.

Currants will remain good upon the trees till October, if the buſhes are well matted up as ſoon

ſoon as the fruit is coloured, but the mats are to be put up in a very dry ſeaſon. And it is the opinion of many gardeners, that we have many ſorts of fruits which will hang upon trees all the year about, and be fair to the eye all that time, if they are kept from the forſt: but as it is natural for trees to diſburden themſelves of the loads of fruit, you are to begin to cover them before they are ripe, otherwiſe they will be in danger of dropping from the trees.

Beſides the paling and frames for ripening of fruit in the Winter, deſcribed in the preceding month, ſome curious gentlemen adviſe the building of walls with fire-places at the back, at twelve or fourteen feet diſtance from one another; the flues thereof to be made with various turnings, till you come near the top of the wall, by which means the whole wall may be regularly warmed at once; and theſe walls are to have frames and glaſſes in the ſame manner as uſed againſt the paling already treated of. The walls of this kind ſeem to be juſtified in the obſervation I have made, that a vine, or other fruit tree, planted againſt a chimney, where a fire is conſtantly kept, or againſt the back of an oven frequently uſed, will ſhoot and ripen its fruit much earlier than in any expoſure to the ſun againſt a common wall; which plainly ſhews fruit may be forced by fire.

Black and white grapes, with other ſorts of fruit, have been ripe in April, by being planted againſt a fire-wall.

And not only fruit, but plants of all kinds, may be forced by fire as well as dung: for there is a way for making a hot-bed by means of fire; for

the uſe of thoſe gardeners who have not an opportunity of getting horſe-dung. This hot-bed is thus managed; you are to make a frame of brick-work of any length, but as wide only as a common hot-bed, to have a fire-place at one end, to paſs into a flue, which is to wind from ſide to ſide, till it reaches the other end, and diſcharges its ſmoak by a chimney; the top of theſe flues may be covered with ſquare tiles, and when the intermediate ſpaces between the flues are filled with coarſe ſand, cover the whole with ſquare tiles, and raiſe the wall about ten inches above the pavement, ſo that you may cover the pavement as deep with ſand, if there be occaſion; then upon the ſand place ſuch frames as are generally uſed for hot-beds, to hold the earth in them, and that the earth may receive the heat of the ſand. This bed, by the heat of the flues, when the fire is lighted, may be made as uſeful as any hot-bed, and may be leſs troubleſome, and more laſting.

Produce of the month.

We have this month in the green-houſe ſeveral trees and ſhrubs in flour, viz, laurus tinus, Glaſſonbury thorn, geranium, thlapſi, ſemperbirens, jeſſamines of ſeveral kinds, ficoides, and aloes. The following are now in fruit; the arbutus, or ſtrawberry tree, amonum plinii, orange, lemon, citron, olive, and the pomegranate.

We have in the conſervatory ſome artichoaks preſerved in the ſand. There are ſeveral ſorts of cabbages, and their ſprouts, for boiling; aſparagus upon hot-beds; and if diligence has been uſed,

uſed, you may find ſome cucumbers. or the plants which were ſown in July and Auguſt.

We have this month on the hot-bed ſallads of ſmall herbs, with mint, terragon, burnet, cabbage-lettuce preſerved under glaſſes, and ſome creſſes and chervil upon the natural ground, with which high taſte helps the ſallads of this ſeaſon. To theſe may be added blanched cellery and endive.

There are variety of herbs for ſoups and the kitchen uſe, ſuch as ſage, thyme, beet-leaves, parſley, ſorrel, ſpinach, cellery, and leeks tops of young peas, &c. Likewiſe ſweet marjoram, dried marygold flowers, and dried mint. The roots are, carrots, parſnips, turneps, and potatoes.

The fruit garden produces little this month, except pears and apples; of the latter we have but few, tho' there are yet plenty of the former, particularly of the St. Germain, ambret, and the colmar.

The flowers we have this month are ſingle anemonies, ſtock-gilliflowers, ſingle wall-flowers, primroſes, ſnow-drops, black hellebore, Winter aconite, polyanthus; and in hot-beds, the narciſſus and hyacinth.

The Compleat Bee-Maſter;

OR

Beſt Method of managing BEES, *as well for profit as pleaſure.*

THESE little inſects are no leſs to be valued for the profits of their labour, than the trifling expence and trouble attendant on them, there being no wood nor foreſt, no fruit nor flower, but what contributes to their daily toil: nor are they at any time idle, but in very cold or wet weather.

The moſt convenient place to make choice of for your apiary, or bee-garden, is near the houſe, that you may the better look after them in ſwarming time. It muſt be ſecurely fenced from all ſorts of cattle, eſpecially hogs, and from all ſorts of fowl, whoſe dung is very prejudicial to them.

They muſt be well defended from high winds on every ſide, with ſuch fences as may let the ſun come to them: but they ſhould be ſheltered with a brick wall that is ſolid, in order to keep the wind from coming thro' it, as well as over it; that place being beſt for them which is moſt expoſed to the ſouth, and where they have the beſt opportunity to ſettle at their hives, when they come laden home.

You ſhould likewiſe plant ſeveral trees and ſhrubs at a reaſonable diſtance, near home, for them

them to pitch on at their ſwarming, that they may not be in danger of being loſt for want of a light-place. Limes, phillyreas, ſycamore-trees, and firs, are particularly good to be planted near them, becauſe they draw a great heal of honey and wax from their flowers.

Having fitted the place, the ſeats to ſet the hives on are to be provided, which muſt be ſet a little ſhelving, that the rain may neither run into the hive, nor lay about the door.

It is better to avoid ſetting any hives on a bench; becauſe in Winter it may cauſe the bees to fight, by going in each other's houſes, which they may ſometimes miſtake for their own; and therefore ſome eſteem ſingle ſtools beſt, which are to be ſet at about two feet diſtance from one another, and to be ſupported with four legs, about twelve or fourteen inches from the ground. They ſhould not be above half an inch, or an inch, bigger than the hive, ſave only before, where there ought to be the ſpace of three or four inches, that the bees may have room enough to light upon it. The beſt ſtools are of wood; thoſe of ſtone are too cold in Winter, and too hot in Summer. The ſtools ſhould be ſet towards the ſouth, or rather a point or two to the Weſt, that the hive may ſomewhat break the eaſt wind from the door, and ſtand in ſtraight rows from weſt to eaſt.

There is another method made uſe of, which is, to make for every hive of bees you intend to keep, a cot or houſe of about two feet ſquare, and two feet and an half high, ſet on four legs, about ten inches above ground, and five or ſix inches within the ground, and

and covered with boards or tiles, to caſt off the rain; the back, or north ſide, being cloſed up very cloſe, and the eaſt and weſt ſides to have doors to open and ſhut at pleaſure, with haſps to them, and at the face, or ſouth ſide, to have a falling door, that may come about half way down, which is to be elevated at pleaſure, and ſerves in Summer for a penthouſe, not only to beat off the rain from the hives, but to defend them from the extreme heat of the ſun, which is apt to melt their honey. The other lower half ſhould have two ſmall doors to open to either hand, which will ſerve to defend the holes of the hives from injurious winds. When the Winter approaches, and the cold winds are like to injures the bees, you may then faſten all the doors, which will defend the bees from the extreme of heat and cold, both which are injurious to them.

If you find them to ſtand too cold in Winter, you may put ſtraw within the doors, to keep them warm; but the extremity of cold don't injure them ſo much as wet, which theſe caſes beſt preſerve them from. They likewiſe prevent the bees getting abroad upon every ſunſhine day, becauſe the hives ſtand ſix or eight inches within the door which make them dark, and the bees inſenſible of the ſmall heat; when, after the common way of ſtools or benches, the ſun caſts its rays to their doors; which light and warmth together excites them forth, to the expence of their proviſion, and the loſs of their lives, as is evident by frequent experience; the mildeſt and the cleareſt Winters deſtroying, or ſtarving, the moſt bees; whereas the coldeſt and moſt froſty Winters beſt preſerve them.

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As ſoon as the willow bloſſoms appear, you may open the under doors, that the light, and warmth of the ſun and air, may encourage them to work, or elſe you will hinder their early breeding, and make them ſlothful.

There are various ſorts of hives uſed in ſeveral countries, but thoſe moſtly uſed in England are wicker hives, made of previt; willow or harl, daubed with cow dung, tempered with duſt, aſhes, or ſand; or hives made with ſtraw bound with bramblets; ſome out of curioſity, that they may ſee the bees work, have them made of wood or glaſs, but they are ſo cold that the bees do not thrive well in them. Others have placed double hives one by another, and ſome upon the tops of others; that ſo, by the taking of one of them away, they may leave the other for the bees, without driving or killing of them; but as theſe experiments are ſeldom brought to perfection, 'tis needleſs to ſay much about them.

The warmeſt and beſt hives are thoſe made of ſtraw, the bigneſs of which ſhould be of between five or ſeven gallons, of a round form, rather broad than high: but you ought to have of each ſize, that you may ſuit your ſwarms to them according as they are bigger or leſſer; and where you deſign to multiply your ſtock, make uſe of ſmall hives, and of the larger where you deſire a great deal of honey. Having thus made your hives, you muſt dreſs them after the following manner; take off all the ſtaring ſtraws, twigs, and jags, that are offenſive in the hive, and make them as ſmooth as poſſible. If you need but few hives, you may prune them with a knife;

if

if many, ſinge and rub them with a peice of brimſtone.

Having pruned your hive, put in your ſpleets, three or four of them, as the largeneſs of your hive ſhall require: the upper ends whereof ſet together at the top of the hive, and the lower faſten about a handful above the ſkirts. Beſides theſe ſpleets, the ſtraw hive ſhould have four other ſpleets driven up into the ſkirts, to keep the hive from ſinking when it is loaded; two of which are the two door-poſts, the other two are hind poſts, ſet at a equal diſtances.

The hives you intend to uſe in ſwarming time muſt be rubbed with ſweet herbs, as thyme, balm, ſavoury, marjoram, fennel, hyſſop, bean-tops, &c. and when the ſwarm is ſettled, take a branch of the tree whereon they pitch, and wipe the hive clean with it, and wet the inſide of the hive with honey, mead, ſalt and water, ſmall beer, or honey, and milk, or ſugar and milk.

Again, your hives muſt be kept cloſe for defence of your bees, firſt, from the cold, by mixing of cow dung with lime or aſhes, and with ſand, with which you muſt ſtop up the edges of the hive round, and againſt Winter put a wicket of a ſmall piece of wood, in which are three or four notches, cut juſt big enough for the bees to go in and out at, that no vermin may get to them.

If the Spring be mild, calm, and ſhowering, it is good for ſwarms, and they will be the earlier; but if it proves a cold, dry, windy Spring, then there will be but few ſwarms, and thoſe alſo backward. There are the moſt

ſwarms

ſwarms and greateſt plenty of honey in dry weather.

You muſt begin too look after them, about the middle of May in an early Spring, and obſerve what you can of the uſual ſigns that precede their ſwarming, that you may be the more watchful over thoſe that require it. When the hives are full (before which they will never ſwarm) they will caſt out their drones, although they be not quite grown, and the bees will hover about the doors. In cold evenings and mornings, there will be a moiſture or ſweating upon the ſtool, and they will continually be running up and down haſtily, and lie out in ſultry evenings and mornings, and go in again when the air is clear.

In warm and calm weather, the bees delight to riſe; but eſpecially in a hot gleam, after a ſhower or gloomy cloud hath ſent them home together. Then ſometimes they gather together without at the door, not only upon the ſtool, but the hive alſo; where when you ſee them begin to hang in ſwarming-time, and not before, you may be ſure they will preſently riſe, if the weather holds.

When the bees lie forth continually under the ſtool, or behind the hive, eſpecially towards the middle of June, 'tis a ſign or cauſe of not ſwarming: for when they have once taken to lie forth, the hive will always ſeem empty, as though they wanted company, and they will then have no inclination to ſwarm.

It is ſtormy and windy weather alſo that will not ſuffer them to ſwarm, when they are ready, and that makes them lie out; for the longer

ger they lie out, the more unwiling they are to ſwarm.

In order to make them ſwarm, ſome keep the hives as cool as may be, by watering and ſhadowing both them and the place where they ſtand, and then enlarging of the door to give them air, they move the cluſter gently with their bruſh and drive them in.

If yet they lie out and ſwarm not, then the next calm warm day about noon, while the ſun ſhineth, put in the better part with your bruſh, and the reſt gently ſweep away from the ſtool, not ſuffering them to cluſter again. Theſe riſing in the calm and heat of the ſun, by their noiſe, as though they were ſwarming, will make the others come forth perhaps unto them, and ſo they may ſwarm.

Many other ways have been attempted to cauſe bees to ſwarm, as by placing a large pewter-platter under the cluſter of bees as they hang out in the heat of the ſun, ſo that it may ſtrongly reflect the heat upon them, which will provoke them to ſwarm.

If neither of theſe methods ſhould ſucceed, but that they lie forth ſtill, then rear the hive enough, to let them in, and cloom up the ſkirts all but the door: if this has not the deſired effect there is no remedy.

The ſigns of after-ſwarms are more certain. When the prime ſwarm is gone, about the eight or tenth evening after, when another brood is ready, and again hath over filled the hive, in the morning before they ſwarm they will come down near the ſtool, and there they call one another, and at the time of ſwarming they deſcend to the ſtool, where anſwering one

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another in more earneſt manner with thick and ſhriller notes, the multitude come forth in great haſte, &c.

If the prime ſwarm be broken, the ſecond will both caſt and ſwarm the ſooner; it may be the next day, and after that a third, and ſometimes a fourth, but all uſually within a fortnight; ſometimes alſo a ſwarm will caſt another that year.

When the ſwarm is riſen, 'tis the uſual cuſtom to make a noiſe with a pan, kettle, mortar, &c. but ſome reckon it an inſignificant ceremony, and others eſteem it prejudical. But if they are like to be gone, caſt duſt or ſand among them to make them come down.

When they have made a choice of a lighting place, you will quickly ſee them knit together into a cluſter; when they are fully ſettled, and the cluſter hath been a while at the biggeſt, then hive them. And having in ſtore ſeveral hives of various ſizes, make choice of one that the bees may go near to fill it that year, but rather under-hive a ſwarm than over-hive them, and rub the hive with ſweet herbs, as it is before directed.

The man that hives them muſt drink a cup of good beer, and waſh his hands and face therewith, or being otherwiſe defended; if the bees hang upon a bough, ſhake them into the hive, and ſet the ſame upon a mantle or cloth on the ground, as is uſual; or you may cut off the bough, if it be ſmall, and lay it on the mantle or cloth, and ſet the hive over it, which is the better way.

If they light near the ground, lay your cloth under them, and ſhake them down, and place

the hive over them ; and ſuch bees as gather together without the hive, wipe them gently with your bruſh towards the hive ; and if they take to any other place than to the hive, wipe them off gently with your bruſh, and rub the place with wormwood, nettles, may-weed, &c. Then ſet the ſwarm as ſoon as you can to the lighting place till all be quiet, every one knowing his own houſe.

If the ſwarms ſeparate, and light in ſight of one another, let alone the greater, and diſturb the leſſer part, and they will fly to their fellows : but if not in ſight, hive them both in two ſeparate hives, and bring them together, ſhaking the bees out of one hive on the mantle whereon the other hive ſtands, and place the other full hive on them, and they will all take to it.

If your ſwarm ſhould happen to come late after the middle of June, and that they are ſmall, under the quantity of a peck ; then put two or three of them together, whether they riſe the ſame day, or in divers ; for by this uniting they will labour carefully, and gather ſtore of honey, and ſtoutly defend themſelves againſt all enemies. The manner of uniting them is thus.

When it grows duſk in the evening, having ſpread a mantle on the ground, near unto the ſtool, where this united ſwarm ſtands, ſet a pair of reſts, for two ſupporters for the hive ; knock down the hive out of which you intend to remove your bees upon the reſt : then lift up the hive a little, and clapping it between your hands to get out the bees, ſet the ſtock to the ſwarm to which you would add them, upon the reſt or ſupporters over them, and they will forth

forthwith aſcend into the hive; thoſe that remain in the empty hive, by clapping it, will haſten after their companions. When you have got them all, either that night, or early the next morning, place the hive on the ſtool, &c.

Many people think it better to place the hive wherein you have newly put your ſwarm you intend to drive into another, in a place that the ſkirts may be uppermoſt, and ſet the other upon it, binding them about the ſkirts with a towel. Then let them ſtand till the morning, and the bees will aſcend, that you may the next morning ſet the receiver on the ſtool: and thus you may put three or four ſwarms together; but obſerve to unite them the ſame evening, or the next at fartheſt, leſt having made combs, they are the more unwilling to part from them.

It is good in all reſpects, to defend one's ſelf, as well as may be, againſt their ſtings; the ſureſt way of doing which is to have a net knit with ſmall meſhes, that a bee cannot get through; and of a fine thread or ſilk, large enough to come over your hat, and to lie down to the collar of your doublet, through which you may perfectly ſee what you do, without any danger, having alſo on your hands a good pair of gloves; if woollen the better.

If a bee ſhould happen to catch you unawares, pull out the ſting as ſoon as you can, and take a piece of iron, and heat it in the fire; or for want of that, take a live coal, and hold it as near and as long to the place as you can poſſibly endure it, and it will attract the fiery venom; and afterwards anoint it with ſome honey or mithridate

or if you take a little ſpittle and wet it, it will cure it.

When a ſwarm has entered its hive, they immediately (if the weather will permit) gather wax, and build combs; and in a few days time there will be compleat combs. They lie ſo thick about them, that it is impoſſible one quarter of them can be employed at once, untill the combs are brought to a conſiderable length, and then a great part of them may be employed in filling them, and the reſt in finiſhing their cells or combs.

Towards the end of Summer, their number begins to leſſen; for in their proſperity at ſwarming time; and ſhortly after, they are far more in number than in the Autumn or Winter, as you may eaſily diſcern between the quantity and number of a ſwarm, and thoſe you kill when you take them; for the bees of the laſt year's breed do now by degrees waſte and periſh by their extraordinary labour, their wings decay and fail them; ſo that a year, with ſome advantage, is the uſual age of a bee, and the young only of the laſt Spring ſurvive, and preſerve the kind till the next.

There are ſeveral things that are injurious to bees, and will much hinder their proſperity, if not prevented.

1. Noiſe, which may in part be remedied by the ſituation of the apiary, free from the noiſe of carts, coaches, bells, echoes, &c.

2. Smoak, where land hath been burn-beaten near unto an apiary, and the wind hath brought the ſmoak towards it, a great many of the bees have been killed; which is the reaſon they will not thrive in or near great towns.

3.

3. Diſagreeble ſmells are very offenſive to them.

4. Bad weather, as wind, rain, cold, heat, &c. which is prevented by the ſituation and fencing of the apiary, and ordering the ſtock as before.

5. The mice, birds, and other devouring creatures, which are to be deſtroyed.

6. Noiſome creatures, as toads, frogs, ſnails, ſpiders, moths, ants, &c. which you muſt endeavour to keep from them, and cleanſe alſo the hives ever anon from theſe vermin.

7. Hornets and waſps, in ſuch years wherein they abound, prove great enemies to the bees, by robbing them of their honey: they are deſtroyed by placing near the door of the hive a glaſs phial half full of beer, cyder, or any ſuch thing; if ſome ſugar be added to it, it will do the better.

8. Bees themſelves prove the greateſt enemies both by fighting and robbing. Several occaſions provoke the bees to fight: which, if the battle be only newly begun, may be hindred by ſtopping up the hive cloſe; but if they be gone ſo far that moſt of the bees are out, the caſting of duſt among them was the ancient way.

The beſt time to remove an old ſtock is a little before, or a little after Michaelmas; or, if you have overſlipt that time, then about the end of February, or beginning of March, before they go much abroad, leſt it prevent their ſwarming. You may remove them at any time in the Winter, but not ſo well as in the forementioned ſeaſon.

The beſt time of the day to do it is in the evening, next after hiving, if the weather be

fair, and do it in the evening when the bees are quiet ; the beſt way of doing of which is thus :

Take a board about the breadth of the bottom of the hive you intend to remove, and in the evening, or two or three evenings before, lift it up, and bruſh the bees that are on the ſtool forward, and let the board be a little ſupported by two ledges, to prevent the death of the bees on the ſtool. On this board ſet the ſtock, and ſo let them ſtand till you remove them. When you come to move them, ſtop up the door of the hive, and ſet the board whereon the hive ſtandeth, on a hand barrow, and carry them to the place you intend.

The feeding of bees is of little uſe ; firſt, becauſe the bees that have not a profitable ſtock of honey to ſerve them over the Winter, are not fit to keep ; and then, becauſe they that are bee-maſters, and have not care enough of them to keep them from ſpending of that ſtock they have in Winter-time, muſt not expect to reap any conſiderable advantage by them ; and it may be preſumed will never take ſo much pains and care as is required in feeding of them. But as

There are ſome ſtocks of bees in the ſpring time, that may ſeem worthy of our care to preſerve, viz. ſuch as have but a ſmall ſtock of honey, and a good quantity of bees, by means of a cold, dry, unſeaſonable Spring, cannot make ſuch timely proviſion as in other years they might have done, yet in all probability may prove an excellent ſtock, and may be worth our aſſiſtance.

Food may be afforded to them ſeveral ways,

but

but the beſt is by ſmall canes or troughs conveyed into their hives, into which you may put the food you give them. The chief time of feeding them is in March, when they begin to breed, and to ſit on their young ones, which muſt be daily continued till the Spring ſeaſon afford them eaſe and proviſion abroad, becauſe at that time their combs are full of young bees.

About the middle of Auguſt weigh your hives, and take the heavieſt; and the lighteſt, if they do not weigh 14 pounds, will hardly maintain themſelves over Winter.

Of all food, honey is the beſt and moſt natural, which will go farther, if it is mixed well with a moderate proportion of good ſweet-wort. Some preſcribe toaſts of bread ſopped in ſtrong ale, and put into the bee-hive, whereof they will not leave one crumb remaining. Some alſo adviſe to put in the hive dry meat, or flour of beans; others, bay ſalt, roaſted apples, &c. which are very good eſpecially ſalt; which, if ſome were mixed with water, and always ſet near them, it might do well, it being certain, that bees near the ſea always thrive the beſt; which ſome attribute to their drinking of ſalt water, they flying (ſay ſome) many miles to get it.

It is again propoſed for the improvement of bees, to take a handful of baum, one dram of camphires half a dram of muſk diſſolved in roſemary, as much yellow bees-wax as is ſufficient, oil of roſes much, ſtamp the baum and camphire very well, and put them in the melted wax with the oil of roſes, and ſo make it up into a maſs, letting it cool before you put in the muſk, for otherwiſe the heat will fume away moſt of the ſcent.

Take

Take of this mafs fo much as a hazle-nut, and leave it within the bee-hive ; it will (as he fays) much increafe the number of the bees, and you will alfo find both honey and wax, three times of more profit than otherwife you would have had.

A great thing to advance your bees is the having of fields near you fowed with brand, colefeed, or turneps, from which they will draw great quantities of honey. Beans alfo are very good for them.

As the chief aim of the keeper of bees is an advantage by their honey and wax : fo many have endeavoured to find out fome way to reap the profits of bees without deftroying them. One way that has been ufed for this purpofe is driving them after this manner.

In September, or in any other time after they have done breeding (elfe the honey will be corrupted by the young bees in the combs) place the hive you intend to take with the bottom upwards between three or four ftakes, and fet the hive you intend to drive the bees into, over the fame, as before directed in the uniting of fwarms ; then often clap the under hive between your hands in the evening ; and fo let them ftand till morning, and then clap it again, and get as many bees out as you can, which will repair to the other hive.

This way is fomething troublefome to the unexperienced, yet beneficial in fuch cafes where you have a great ftock of honey and few bees in one hive, and a fmall ftock of honey in another, by which means you fave the lives of your bees, which will gladly exchange their hungry habitation for a more plentiful.

But

But theſe ways have altogether failed the deſigns of the undertakers, as I ſaid before; and, therefore I ſhall at preſent only deſcribe the common uſage, which is the taking of combs by killing the bees, which certainly muſt be the only way of ordering them, becauſe it is impoſſible for them to live, if you deprive them of their food; and therefore, about the latter end of Auguſt, conſider with yourſelf what ſtalls you will keep, and what you will kill. The beſt ſwarms to keep are thoſe of one or two years ſtanding; and thoſe of three or four, which, by reaſon of their ſwarming the laſt Summer, are full of bees, and are the moſt likely to be beſt; but thoſe of that age which have caſt hives, not being likely to continue, are to be taken, as are alſo poor ſwarms not worth their feeding, and all light ſtocks, and ſuch as do not carry out their droſs, and drive away the drones in good time; alſo thoſe whom the robbers eaſily aſſault, are to be ſuſpected; and if their combs be once broken, delay not their taking: and alſo all ſtalls of three years old, or upward, that have miſſed ſwarming two years together, eſpecially thoſe that have lain out the Summer before, and did not caſt the laſt Summer, for ſuch do ſeldom proſper; and therefore it is better to take them while they are good, than in a vain hope of increaſe to keep them till they periſh.

It is not ſafe to truſt to any after they have ſtood five years and upwards, that have miſſed ſwarming two years together, unleſs it be ſome ſpecial ſort of bees, which always keep themſelves in heart; ſuch may be kept nine or ten years.

Likewiſe, if you have any that are very full of honey, as in ſome years they will be, even down

down to the ſtool, ſuch ſtall is worth three or four, and therefore take them in their ſeaſon.

Having made choice of your ſtalls to be taken, two or three hours before ſun-ſetting dig a hole in the ground about nine inches deep, and almoſt as wide as the hive ſkirts, laying the ſmall earth round about the brims, then having a little ſtick ſlit at one end, and ſtripped at the other, take a brimſtone match five or ſix inches long, and about the bigneſs of your little finger, and making it faſt in the ſlit, ſtick it in the middle or ſide of the hole, ſo that the top of the match may ſtand even with the brim of the pit, or within one inch of it, and then ſet another by it dreſſed after the ſame manner, if the firſt be not ſufficient. When you have fired the matches at the upper end, ſet over the hive, and preſently ſhut it cloſe at the bottom with the ſmall earth, that none of the ſmoak may come forth, ſo ſhall you have the bees dead in a quarter of an hour.

The hive being taken and houſed, lay it ſoftly on the ground upon the ſides, not the edges of the combs, and looſen the ends of the ſplints with your finger, and the edges of the combs where they ſtick to the ſides of the hive, with a wooden ſlice, take them out one after another, and having wiped off the half dead bees with a good feather, break the combs preſently, while they are warm, into three parts.

The honey which firſt flows of itſelf from the combs is called Virgin honey, as is alſo the honey which comes from the firſt year's ſwarm. This is the beſt and fineſt honey, being more chryſtalline, and of a finer taſte, than that which is ſqueezed out of the combs, and ſo may be kept for particular uſes, or for making of the fineſt mead.

I ſhall conclude at preſent with giving you ſome account of the way of o d ring your honey and wax, with the virtues of them, that you may be the more ſenſible of the advantages that accrue to mankind by this ſmall inſect.

When your combs have run out as much as they will, put it up warm into pots by itſelf, this being the fineſt honey, as I ſaid before, and it will for two or three days work up a ſcum of coarſe wax, droſs, and other ſtuff, which muſt be taken off. The other honey, which is the coarſer ſort, you muſt get from the combs by preſſing them, which you may alſo pot, except what you deſign for the preſent to make metheglin with; which being done, what remains put into a hair bag, and waſh in a trough, or other veſſel, to make mead or metheglin; and when the ſweetneſs is all waſhed out, being cruſhed dry, try the balls for wax.

The manner of ordering, which is as followeth.

Take the wax and droſs, and ſet it over the fire in a kettle, or other veſſel, that may eaſily contain it, and pour in as much water as will make the wax ſwim, that it may boil without burning, and for this reaſon, while it is gently boiling over the fire, ſtir it often; when it is thoroughly melted, take it off the fire, and preſently pour it out of the kettle into a ſtrainer of fine thin linnen, or of twiſted hair, ready placed upon a ſcrew or preſs, lay on the cover, and preſs out the liquor (as long as any wax comes) into a kettle of cold water, but firſt wet both the bag, and the preſs, to keep the wax from ſticking; at the firſt cometh moſt water, at the laſt moſt droſs, and in the middle moſt wax.

The

The wax growing hard, make it into balls, ſqueezing out the water with your hand; which when you have done, break all the balls into crumbs, and in a kettle or ſkillet ſet it over a gentle fire; while it is melting, ſtir it, and ſkim it with a ſpoon wet in cold water, and as ſoon as it is melted and ſcummed clean, take it off, and pour it into a pan or mould, beſmearing the bottom and ſide, firſt with honey (the wax being as cool as it will run thro' a linen ſtrainer:) when you come near the bottom, pour it gently, till you ſee the droſs come, which ſtrain into ſome other thing by itſelf, and when it is cold, either try it again, or (having pared away the bottom) keep it for uſe.

When the wax is in the pan or mould, if there is any froth remaining on the top, blow it together at one ſide, and ſkim it off gently with a wet ſpoon. This done, ſet not the cake abroad where it may cool too haſtily, but put it in a warm houſe not far from the fire, and if it be a large cake, cover it warm, to keep the top from cooling till the inward heat be allayed, and ſo let it ſtand, not moving it till the cake be cold; if it ſtick, warming the veſſel or mould a little will looſen it, ſo that it will preſently ſlip out.

The properties of good wax are, that it is yellow, odoriferous or ſweet, fat, faſt or cloſe, light, pure, being void of any other matter. 'Tis always a ready money commodity, eſpecially Engliſh wax, which is much better than foreign, and commonly ſells for about five or ſix pounds a hundred, it being of extraordinary uſe both in chirugery and phyſic, beſides the uſe that is made of it for lights, the clearneſs and ſweetneſs

nefs of which makes it preferred before all other ſorts.

As to its chirurgical or phyſical virtues, it is reckoned a mean between hot and cold, between dry and moiſt, being the ground of all ſearcloths and ſalves; it mollifies the ſinews, ripens and reſolveth ulcers; the quantity of a pea being ſwallowed down by nurſes, diſſolveth the milk curdled in the breaſt.

Its oil is of excellent virtue to cure wounds, be they never ſo large or deep (being before ſtitched up) in ten or twelve days at the moſt, and healeth ſmall wounds in three or four days, by only anointing the wound therewith, and applying a cloth wet in the ſame, ſtayeth the ſhedding of hair, either to the head or face, by anointing therewith. And it is good for inward diſeaſes, if you give one dram at a time in white wine, it will provoke urine, help ſtitches and pains in the loins, the cold gout, and all other griefs coming of cold.

Honey is little inferior, either as to its benefit or uſefulneſs; it is of ſubtil parts, and therefore doth pierce as oil, and eaſily paſſes the parts of the body; it hath a power to cleanſe, and therefore it openeth obſtructions, and cleareth the breaſt and lungs of thoſe humours that fall from the head: it looſeneth the belly, purges the foulneſs of the body, and provoketh urine; it nouriſheth very much, and breedeth good blood: it prolongeth life, and keepeth all thing uncorrupted, which it is put into; and therefore phyſicians do temper therewith ſuch medicines as they deſign to keep long.

It is good for ſuch as have eaten muſhroons, or drank poppies; it is an eminent ingredient in

the great antidotes of treacle and mithridate, and is good againſt pleuriſies, phthiſicks, and other diſeaſes of the lungs. But it is for any diſtemper much better to be taken clarified than raw, it being thereby made more nouriſhing, lighter of digeſtion, and leſs laxative, as alſo leſs ſharp. &c.

The whole Art and Method of breeding and rearing FOWLS, DUCKS, GEESE, TURKIES, PIGEONS *and* RABBITS.

FOWLS.

THE country yard cannot be ſaid to be compleat, till well ſtocked with fowl, whoſe advantage will appear to every one who keep them. The pooreſt villager may reap the ſame benefit from the products as the moſt ſubſtantial farmer, they being able to ſhift for themſelves the greateſt part of the year, by their feeding on inſects, corn, or any thing almoſt that is edible by any ſort of animal.

I ſhall not enter into a minute deſcription of the ſeveral ſorts of cocks and hens, only adviſe you to chuſe thoſe that are the beſt breeders, and the beſt layers; the oldeſt being always reckoned the beſt ſitters, and the youngeſt the beſt layers; but no ſort will be good for either, if they are kept too fat; the beſt age to ſet a hen for chickens, is from two years old to five, and the beſt month to ſet them is February; though any month between that and Michaelmas is good.

good. A hen ſits twenty days, whereas geeſe, ducks and turkeys, ſit thirty. Obſerve to let them have conſtantly meat and drink near them while they ſit, that they may not ſtraggle from their eggs and chill them.

One cock will ſerve ten hens.

It fowls are ſet with buck or French-wheat, or with hemp ſeed, it is ſaid they will lay more eggs than ordinary; and buck wheat, either whole or ground, made into paſte, which is the beſt way, is a grain that will fattin fowls or hogs very ſpeedily; but the common food uſed is barley meal with milk or water, but wheat flour is better moiſtened.

A good hen ſhould not differ from the nature of the cock; ſhe ſhould be working, vigilant and laborious, both for herſelf and her chickens; in ſize the biggeſt and largeſt are the beſt, every proportion anſwerable to thoſe of the cock, only inſtead of a comb, ſhe ſhould have upon her crown, a high thick tuft of feathers.

She ſhould have many and ſtrong claws; but it will be better if ſhe has no hinder claws, becauſe they often break the eggs, and beſides, ſuch as have, do ſometimes prove unnatural.

Crowing hens are neither good layers nor good breeders.

The elder hens are rather to be choſen for hatching than the younger, becauſe they are more conſtant, and will ſit out their time; but if you chuſe for laying, take the youngeſt, becauſe they are luſty, and prone to generation; but do not chooſe a fat hen for either of theſe purpoſes; for if ſhe be ſet, ſhe will forſake her neſt; the eggs ſhe lay will be without ſhells, and beſides, ſhe will grow ſlothful and lazy.

Thoſe eggs that are laid when the hens are a year and a half, or two years old, are the beſt; you muſt at that time give the hens plenty of victuals, and ſometimes oats with funegreek to heat them, if you would have large eggs; for thoſe that are fat commonly lay but ſmall ones; mix ſome chalk with their food, or mix ſome bruiſed brick with their bran, moiſtened with a little water; and give them their belly full of half boiled barley, with vetch and millet.

Some hens have the ill faculty of eating their eggs; to prevent this, take out the white of an egg, and put moiſt plaiſter round about the yolk, and ſuffer it to grow hard; and when the hen attempts to eat it, and finds ſhe cannot do it, ſhe will ſoon give over breaking her eggs.

You may likewiſe pour a clear plaiſter upon the yolk of an egg, and let it harden, ſo that it may ſerve for a ſhell, and put it into the neſt; or you may ſhape an egg of plaiſter, or chalk, and let that be for a neſt egg.

Thoſe hens that have ſpurs often break their eggs, and generally will not hatch them, and they will ſometimes eat them; theſe muſt be ſcoured as well as thoſe that ſcratch and crow like a cock; firſt, by plucking their great quills out of their wings, and by feeding them with millet, barley and paſte, cut into bits, pounded acorns and bran, with pottage, or crumbs of wheat bread, ſteeped in water or barley meal.

Keep them in a cloſe place, and at reſt, and pull the feathers from their heads, thighs and rumps. If a hen be too fat, or has a looſeneſs, ſhe will lay windy eggs.

A hen will ſit well from the ſecond year of her laying, to the fifth : the beſt time to ſet a hen, that the chickens may be large and moſt kindly, is in February, in the increaſe of the moon, that ſhe may diſcloſe the chickens in the increaſe of the next new moon, being in March ; for one brood of this month's chickens is worth three of thoſe of any other month.

Hens may ſet from March to October, and have good chickens, but not after that time, for the Winter is a great enemy to their breeding.

A hen ſits juſt twenty-one days, and if you ſet a hen upon the eggs of ducks, geeſe or turkies, you muſt ſet them nine days before you put her own eggs to her, of which a hen will cover nineteen ; but always ſet an odd egg, what number ſoever you ſet her with.

It will alſo be proper to marke one ſide of the eggs, when you put them under the hen, and to obſerve whether ſhe turns them from the one ſide to the other, and if ſhe does not, then take an opportunity when ſhe is from them to turn them yourſelf. But a hen that does not turn them herſelf is of the leſs value.

Take care that the eggs you ſet a hen on be new, which may be known by their being heavy, full and clear, which may be known by looking through them in the ſun ; nor do you chooſe the largeſt, for they have oftentimes two yolks, and tho' ſome are of opinion that ſuch will produce two chickens, it proves commonly a miſtake, and if they do, they generally prove abortive and monſtrous.

A hen muſt not be taken off or diſturbed from

her neſt, for that will make her utterly forſake it.

While ſhe is ſitting, you may place her meat and water near her, that her eggs may not cool, while ſhe is gone to ſeek her food. If ſhe ſhould be abſent from her neſt, ſtir up the ſtraw, and make it ſoft and handſome, and lay the eggs in the ſame order ſhe left them.

It is very neceſſary to perfume her neſt with roſemary or brimſtone, and you muſt take care that the cock does not come at the eggs and ſet upon them, for he will endanger the breaking of them, and cauſe the hen not to like her neſt ſo well as before.

When hens are laying, the old ſtraw ſhould be taken away, and freſh put in, that it may not breed fleas, or other vermin, which much incommodes them.

The maladies incident to hens are as follows;

Setting hens are ſometimes troubled with lice and vermin: for the cure, pound burnt cummin and ſtapniſgar, of each equal quantities, and mix it with wine, and rub the hens with it, or waſh them with a decoction of wild lupines.

If hens are troubled with a looſeneſs, mix a handful of barley meal, and as much wax, in ſome wine, make it into a maſs, and give it them in the morning before they have any other meat, or elſe let them drink a decoction of apples or quinces.

Hens, by laying too many eggs, ſometimes exhauſt their ſtrength and languiſh: the ſame likewiſe happens by hens ſitting too long; to remedy this, take the white of an egg, which you muſt roaſt till it looks as if it was burnt;

burnt ; mix this with an equal quantity of dried raiſins, alſo burnt, and give the hens this faſting.

Your hen-houſe muſt be large and ſpacious, with a pretty high roof and ſtrong walls, to keep out both thieves and vermin ; let there be windows on the eaſt ſide, that they may enjoy the benefit of the riſing ſun, ſtrongly lathed and cloſe ſhut ; upwards and round about the inſides of the walls upon the ground, ſhould be made large pens of three foot high, for geeſe, ducks and large fowls to ſet in, and near unto the evings of the houſe ſhould be long perches, reaching from one ſide of the houſe to the other, on which ſhould ſet cocks, hens, capons and turkies, each on ſeveral perches, as they are diſpoſed.

At another ſide of the houſe, at the darkeſt part over the ground pens, fix hampers full of ſtraw for neſts, in which hens ſhould lay their eggs ; but when they ſit to hatch chickens, then let them ſit on the ground, otherwiſe it will be dangerous.

Alſo let there be pins ſtuck in the walls, that the poultry may climb to their pearches with the greater eaſe.

The floor muſt not be paved, but made of earth ſmooth and eaſy. Let the ſmaller fowl have a hole made at one end of the houſe, to go in and come out at when they pleaſe, or elſe they will ſeek out roofts in other places ; but of larger fowl, you may open the door morning and evening.

It would be the better if this hen-houſe was ſituated near ſome kitchen, brew-houſe, bakehouſe, or kiln, where it may have the

heat

heat of the fire, and be perfumed with ſmoak, which is to pullets both delightful and wholſome.

As ſoon as your chickens are hatched, if any be weaker than the reſt, wrap them in wool, and let them have the heat of the fire; it will alſo be very good to perfume them with roſemary; the firſt hatched chickens may be kept in a ſieve till the reſt are diſcloſed, for they will not eat for two days; ſome ſhells being harder than others, they will require ſo much more time in opening; but unleſs the chickens are weak, or then unkind, it will not be amiſs to let them continue under her, for ſhe will nouriſh them kindly.

When they are two days old, give them very ſmall oatmeal, ſome dry, and ſome ſteeped in milk, or elſe crumbs of fine white bread; and when they have gained ſtrength, curds, cheeſe parings, white bread, cruſts ſoaked in drink or milk, barley meal, or wheaten bread ſcalded, or the like ſoft meat, that is ſmall and will be eaſily digeſted.

It is neceſſary to keep them in the houſe for a fortnight, and not ſuffer them to go abroad with the hen to worm. Green chives chopped among their meat is very good, and will preſerve them from the rye or other diſeaſes in the head, and never let them want clear water, for puddle water will be apt to give them the pip.

Nor muſt you let them feed upon tares, darnel, or cockle, for theſe are very dangerous to young ones, nor let them go into gardens till they are ſix weeks old.

If you would have them crammed, coop them up when the dam has forſaken them, and cram them

them with dough made of wheaten meal and milk, which dip in milk, and thuſt down their throats, but let them not be to big, leſt they choak them; they will be fat in a fortnight.

To diſtinguiſh whether a chicken is good or not. After a chicken is killed it will be ſtiff and white, and firm in the vent, if new killed; but tender, and green in the vent, if ſtale.

If you rub your finger on the breaſt of a ſcalded chicken, if it be new killed it will feel rough; but, if ſtale, ſlippery and ſlimy.

A crammed chicken, if it be fat, will have a fat rump, and a fat vein upon the ſide of the breaſt of her, like a pullet.

In order to fatten chickens, you muſt put them into coops, and feed them with barley meal; put likewiſe a ſmall quantity of brick-duſt into their water, which they ought never to be without: this laſt will give them an appetite to their meat, and fatten them very ſoon; for in this caſe it muſt be conſidered, that all fowls and birds have two ſtomachs, as they may be called, the one is their crop, that ſoftens their food, and the other the gizzard, that macerates the food, in the laſt we always find ſmall ſtones and ſharp ſand, which help to do that office, and without them, or ſomething of that kind, a fowl will be wanting of its appetite to eat; for the gizzard cannot maſticate, or, as it may be ſaid, grind the food faſt enough to diſcharge it from the crop, without ſuch ſand or ſtones; and in this caſe the brick-duſt is aſſiſting.

DUCKS.

DUCKS.

DUCKS are very neceſſary for the huſbandman's yard, in that they require no charge in keeping; they live on loſt corn, worms, ſnails, &c. for which reaſon they are very good for gardens. Once in a year they are very great layers of eggs, eſpecially a ſort of duck that turns up the bill more than the common kind; and when they ſit they need little attendance, except to let them have a little barley or offal corn and water near them, that they may not ſtraggle far from their neſt to chill their eggs.

In general it is found more profitable to ſet a hen upon the duck eggs, than any kind of duck whatever, becauſe the old one leads them when hatch'd, too ſoon to the water, where, if the weather be chill, ſome will be loſt. They follow the hen a good while upon the land, and ſo get hardy before they venture to the water.

About thirteen eggs is the proper number to let a duck ſit upon; the hen will cover as many of theſe as of her own, and will bring them up well; ſo that every way ſhe is more profitable for that purpoſe.

When the ducklings are hatch'd they require no care, if the weather be tolerably good; but if they happen to be produced in a very rainy ſeaſon, it right to take them under cover a little, eſpecially in the night; for, though the duck naturally loves water, it requires the aſſiſtance of its feathers, and, till they are grown, is eaſily hurt by the wet.

The fattening of ducks at any age is very eaſy,

eaſy, and whether it be the duckling, or the grown duck, the method to be uſed is exactly the ſame. They are to be put into a quiet dark place, and kept in a pen, where they are to have plenty of corn and water; any kind of corn will do, and with this ſingle direction, they will fatten themſelves extremely well in fifteen or tweny days; and will bring a price that very well repays their feeding.

GEESE.

THE benefits ariſing from geeſe are, for food, their feathers, and their greaſe. They will live upon commons, or any ſort of paſture, and need little care and attendance; only they ſhould have plenty of water. The largeſt geeſe are reckoned the beſt, but there is a ſort of Spaniſh geeſe that are much better layers and breeders that the Engliſh, eſpecially if their eggs, are hatched under an Engliſh gooſe.

Geeſe lay in the Spring, the earlier the better, becauſe of their price, and of their having a ſecond brood. They commonly lay twelve or ſixteen eggs each. You may know when they will lay, by their carrying of ſtraw in their mouths, and when they will ſit, by their continuing on their neſt, after they have laid. A gooſe ſits thirty days; but if the weather be fair and warm, ſhe will hatch three or four days ſooner. After the goſlins are hatched, ſome keep them in the houſe ten or twelve days, and feed them with curds, barley meal, bran, &c. After they have got ſome ſtrength, let them out three

three or four hours in a day, and take them in again, till they are big enough to defend themſelves from vermin. One gander will ſerve five geeſe.

If you would fat green geeſe, you muſt ſhut them up when they are about a month old, and they will be fat in about a month more. Be ſure to let them have always by them in a ſmall rack ſome fine hay, which will much haſten their fatting. But for fatting of older geeſe, it is commonly done when they are about ſix months old, in or after harveſt, when they have been in the ſtubble fields, from which food ſome kill them, which is a good way; but thoſe who have a mind to have them very fat, ſhut them up for a fortnight or three weeks, and feed them with oats, ſplitted beans, barley meal, or ground malt mixed with milk, the beſt thing to fatten them with being malt mixed with beer. But in fatting of all water fowl you may obſerve, that they uſually ſit with their bills on their rumps, where they ſuck out moſt of their moiſture and fatneſs, at a ſmall bunch of feathers, which you will find ſtanding upright on their rumps, and always moiſt, with which they trim their feathers, which makes them oily and ſlippery more than other fowls feathers are, that the water may ſlip off them, which, if cut away cloſe, will make them fat in leſs time, and with leſs meat than otherwiſe. Geeſe will likewiſe feed on and fatten well with carrots, cut ſmall, and given them; or if you give them rye before or about Midſummer, it will ſtrengthen them, and keep them

them in health, that being commonly their ſickly time.

In ſome countries they ſhear the geeſe for their feathers, and ſome pull them twice a year; but this latter way is more injurious to them, and therefore it is better ſtaying till moulting-time, and till their death, for their feathers.

TURKIES.

TURKIES are fowls that proſper very well in open countries, where there is not much ſhelter to harbour vermin to deſtroy them; for they are naturally inclined to ramble. The hens likewiſe are ſo negligent of their young, that whilſt they have one to follow them, they never take any care of the reſt; and therefore there muſt be a great deal of care taken of them while they are young, to watch them, and to keep them warm, they being a bird that cannot bear the cold. But ſome, where they have a conveniency of a ſmall cover near the houſe, let them take their liberty, and ſeek their own neſts; but it is only in ſome particular places that they do well with ſuch management. I knew a gentleman that had a hen turkey of the wild kind from Virginia, of which, and an Engliſh cock, he raiſed a very fine breed, that bred wild in the fields, and always became tame when grown up; they were a very hardy breed, and much larger than ours, and reared their young ones without any care or trouble, breeding much better than our Engliſh.

If you keep them with corn, they are very great feeders, and will devour a great deal;

but if left to their liberty when grown up, they will get their own living, without either trouble or charges, by feeding on her's, ſeeds, &c.

Turkies being very apt to ſtraggle, will often be laying their eggs in ſecret places, and therefore the common ſort of them muſt be often watched, and made to lay at home. They begin to lay in March, and will ſit in April. Eleven or thirteen eggs are the moſt they ſhould ſit on. They hatch in between twenty-five and thirty days; and when they have hatched their brood, you muſt be careful to keep the young ones warm; for the leaſt cold kills them. Feed them either with curds, or green freſh cheeſe cut in ſmall pieces. Let their drink be new milk, or milk and water. Some give them oatmeal and milk boiled thick together, into which they put wormwood chopped ſmall, and ſometimes eggs boiled hard, and cut in little pieces. You muſt feed them often, for the hen will not take much care of them, and when they have got ſome ſtrength, feed them abroad in a cloſe walled place, where they cannot ſtray; you muſt not let them out till the dew is off the graſs, taking care to have them in again before night, becauſe the dew is very prejudicial to them.

For the fatting of turkies, ſodden barley is very excellent, or ſodden oats for the firſt fortnight, and for another fortnight cram them as you do capons. They are only to be crammed in a morning, which muſt be given to them warm, and let out all day, being ſometimes fed with corn while out; becauſe, being a ſullen bird, they are apt elſe not to fat ſo kindly.

Their

Their eggs are reckoned very wholſome, and a great reſtorer of nature.

PIGEONS.

WE come now to treat of a fowl ſmaller in its ſize than any of the before-mentioned kinds, but ſuperior to many of them in value; the pigeon. The management of this bird is alſo different in a great meaſure from that of the others, ſo that it naturally falls under conſideration ſingly.

The proper pigeon for the dovecoat, which is the only kind the farmer is to regard, is able, the greateſt part of the year, to provide for itſelf; and when it requires his aſſiſtance, the food is not of any dear kind. Beſide the common advantages of the breed, there is that great article their dung, which is of ſuch ſervice for manure, that it muſt be the intereſt of every farmer to provide it for his own uſe, eſpecially as that is to be done with great eaſe, and the ſame method that affords it will yield him alſo many other advantages.

There are two ſorts of pigeons, the tame, and dovecoat. The tame pigeon is valued not only for its beauty, but for the largeneſs of its body; the common pigeon, which is the kind uſually kept in dovecoats, and thence called the dovecoat pigeon, is ſmaller, and leſs beautiful.

The tame kind generally have but two young ones at a brood; but they make ſome amends for the ſmallneſs of the number by the frequency of their hatching; for, if well fed and tended, they will have young ones every month.

For the choice of theſe the beauty is generally moſt regarded; but there ſhould be care taken to pair them well, and this is the more worth while, becauſe they are not apt to ſeperate afterwards.

They muſt be kept clean, for they diſlike dirt, though they make a great deal of it. But their food is ſo dear, that few, but thoſe who know very well how to manage them, care to meddle with them. Their beſt food is tares or white peas, and they ſhould have beſide this ſome gravel and clean water ſcattered about, at all times: a great deal of care muſt be taken to preſerve them from vermin, and their eggs from the ſtarlings and other birds, which always haunt the places where they are kept, and will ſuck them.

In order to the perfect thriving of theſe pigeons, it will be proper, beſide their food, gravel, and water, always to let there be ſalt, clay, or ſome other thing with ſea ſalt in it, for them to peck at their pleaſure.

We have ſaid thus much with reſpect to the management of the tame pigeon, for the information of ſuch as may chuſe to breed them, and have not had opportunities of ſeeing it done; and it will be proper to add here, that although the expence and trouble they occaſion, be more than is worth the huſbandman's while in general to give himſelf, yet there is this advantage, that their dung is richer than that of the common pigeon as a manure, which is owing to their food.

We come now to the conſideration and management of the common or dovecoat pigeon, which

which is a ſubject that demands, and deſerves the huſbandman's utmoſt regard.

There are ſome counties where the huſbandmen ſow great quantities of horſe-beans and grey peas, and in theſe particularly the pigeons feed to a great advantage. Theſe ſort of pulſe are ſowed earlier than other kinds of grain; and their early feeding upon them makes them healthful and ſtrong at thoſe times, and is an occaſion of their breeding earlier than they do elſewhere, which is a conſideration of great importance.

The common blue pigeon is properly the dovecoat breed; and it has the advantage of many other kinds, in that it is hardier, and will live in the worſt Winters.

If it be too ſmall for the farmer's purpoſe, he may mend the breed by putting in a few tame pigeons of the moſt common kind, and the leaſt conſpicuous in their colours, that the reſt may the better take to them by finding them more like themſelves; this, however, is to be done with caution, and never without a due conſideration; for tho' the bigneſs of a pigeon's body is a plain advantage, yet it is very well known in the kinds in general, that the ſmalleſt bodied are the beſt breeders.

The ringdove has been by ſome introduced into the dovecoat, by ſetting the eggs under a common pigeon; they will in this caſe live, and take their chance among the pigeons; and they have two over them, the one in their largeneſs, and the other in their hardneſs; for they will endure any weather, and live upon any food.

The husbandman should have a very careful eye upon the proportion of the sexes among his pigeons; for there is nothing so hurtful as the having too many cocks, especially if they keep the larger, or tame kind. It is his business to keep his dovecoat well stocked; and most people who keep them make their consciences easy about deluding away those belonging to their neighbours; but this abundance of cocks thins the dovecoat, for they grow quarrelsome, and will beat others away, till by degrees a very thriving dovecoat shall be, by this single mistake, reduced to a poor condition.

A very cheap and easy way of making a dovecoat, is to build the wall with clay, mixed with straw; they may be made four feet or more in thickness, and while they are wet it is easy to cut holes in them with a chissel or other instrument.

Of whatever materials the coat be erected, it should be white-washed frequently on the outside. The pigeon, as has been said already, is a cleanly bird: it loves the appearance of neatness; and beside the white colour renders the building more conspicuous.

As to the food of pigeons, beside the peas and tares already mentioned, barley is very proper, heartening them very much, and making them lay; and for the same purpose buckwheat also is an excellent as well as cheap food.

For the greatest part of the year, however, the common pigeons in a dovecoat take care of themselves, and need no food from their keeper. There are only two seasons at which it is necessary or proper to feed them. One of these times is the depth of Winter, when the ground

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is covered with ſnow, or hardened ſo by froſt, that nothing is to be got; and the other is, the middle or latter end of June.

The reaſon of feeding them in the firſt of theſe ſeaſons is obvious; the latter, the farmers when they ſpeak of this fowl call benting time. There is a graſs called bent graſs, the ſeed of which is ripe about this ſeaſon, and is the only food of that kind the pigeons can eaſily get, the peas being not yet ripe. This is a very poor food, and the pigeons at this ſeaſon uſually have many young broods; ſo that they will be ſtarved if they are left to this poor diet; and the farmer will always find his account in giving them food at this ſeaſon, as well as the other. This laſts however but a ſmall time; and the other is only neceſſary at the ſevereſt days of winter; ſo that the pigeon is at the utmoſt, but a ſmall expence, and that for a very ſhort time.

Beſide the food, the breeder of tame pigeons has been adviſed to give them a lump of ſalted clay, and the ſame indulgence muſt be ſhewn to theſe. But as they are more numerous, there is to be a larger allowance. A large heap of clay ſhould be laid near the dovecoat, and the brine of the family continually beaten in among it. Another way is to make a kind of mortar with lime, ſand, clay and ſalt, which they will peck with great ſatisfaction. The pigeons themſelves have pointed out this method, for they are continually pecking at the joints of walls to get out the mortar. When it is thus made on purpoſe for them, it is beſt to make it thin, and keep it ſo by often beating it up with brine.

In

In ſome places they lay what is called a ſalt cat near the dovecoat. This is a large lump of ſalt made for the purpoſe at the ſalt pans; and is the method commonly taken where there are works in the neighbourhood, but the way of uſing ſalt in a mixture with clay is better.

What I have found by experience to anſwer beſt of all is this. A heap of loam is to be laid near the dovecoat, and beat up to a kind of pap with brine or water; into this is to be thrown a large quantity of bay ſalt, and a little ſaltpetre, and with it a ſhovel full or two of large coarſe ſand. When brine is uſed to beat up the loam, leſs ſalt is to be uſed; and when water, there muſt be the more of it in proportion. And in the ſame manner, if the loam contain a great deal of ſand, the leſs is to be added to it. And if it contain leſs, the more is to be given. Where loam is not to be had, clay will do; but then a much larger quantity of ſand muſt be put in; and the beſt ſand for this purpoſe is large coarſe ſea ſand, which is already impregnated with ſalt water; or that which is got in ſcreening of gravel.

It is a very ſingular thing that the pigeon loves ſalt in this manner, and its fondneſs for ſaltpetre, which is very great, is not ſo well known; tho' this might have been diſcovered by obſerving the liking this bird has to the mortar in old walls, which contains a ſalt very nearly allied to the common ſaltpetre.

Salt is not only uſeful in this manner to pleaſe the pigeons, when they are in health, but nothing recovers them ſo readily from ſickneſs. A

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mixture of bay ſalt and cummin ſeed, being with them a univerſal remedy.

A great many contrivances have been publiſhed, and many more are handed about among the country people as great ſecrets, for making the pigeons love their habitation, and tempting ſuch ſtragglers from their neighbours as chance to come to the coat to ſettle in it. Some have adviſed the uſe of aſafœtida, and others of cummin ſeed before mentioned for this purpoſe; but the beſt method of all others is to keep up conſtantly ſuch a heap of ſalted loam as I have before deſcribed; this is what they love, and they will therefore ſtay where they can have it in plenty. This contrivance, with the addition of keeping the dovecoat neat and clean, and not ſuffering them to be diſturbed in it, will be ſure to keep the ſtock in good number, and too likely to increaſe it at the expence of the neighbours.

The profit of pigeons is very conſiderable, and very certain, for they breed faſt, and there is a conſtant demand for them. Near great towns it may be worth while to keep ſome of the large tame kind; becauſe, although they cannot be fed but at a large expence, yet their young come ſo early, and are ſo fat and fine, that they command a price, which very well returns it. But in the country the common pigeon is the proper kind; for though the price that the birds fetch is not nearly ſo great, their number and ſmall expence of keeping, very well make amends.

I have ſpoken often to the farmers to recommend their ſetting up dovecoats, but have found it in nothing ſo difficult to make them liſten to me. While they have bought pigeons dung at

a great price, and fetched it from a great diſtance, they have ſtill been backward to think of keeping pigeons themſelves for their own ſupply. There is a ſuperſtition among them, that it is unlucky to ſet up a new dovecoat; this has come down from father to ſon, and they perſuade themſelves it would certainly be followed by death in the family. Nothing can be ſo ridiculous, or ſo weak, as ſuch a ſuppoſition: but there never was an old woman's tale ſo deeply rooted.

RABBETS.

RABBETS are very profitable creatures for their great increaſe, and their being kept on dry barren ſand, or gravel that will maintain nothing elſe, which the dryer it is the better for them; this ſort of lands they muſt improve by their dung for rye. Beſides which many make great profit of them, by keeping of them in hutches near great towns, and ſome keep great quantities of them in pits to catch when they want them, they being a very diſh upon any occaſion; but they muſt be in a very dry warm ſoil; if they are any thing deep; they will be elſe too cold, or too damp for them. I ſhould rather prefer for them a large barn made very tight after the way of making of barns for preſerving corn in, to keep vermin out of; for the tame rabbets muſt lie dry and warm, or elſe they will not breed in Winter, which is the chief time of their profit, and what makes them preferred before the wild ones, they are much better meat, if they have their liberty, eſpecially the white ſhock Turkey rabbet.

A rabbet begins to breed at a year old, will kindle at leaſt five times a year, if it litters in March; it carries its young in its belly for thirty days, and as ſoon as the doe has kindled, they are to be taken from her at about ſix weeks old, then put the doe to buck; or you may put her to buck when her young are about a month old.

The males are of a cruel diſpoſition, and frequently kill the young ones, if they can come at them; and therefore the females, after they have kindled, hide them, and cloſe up the holes in ſuch a manner that the buck cannot find them.

The huts in which tame rabbets are to be kept, ſhould be about two feet ſquare, and a foot high, and that ſhould be divided into four partitions or ſquares, one quarter with an open grate or wire window, through which the rabbets may feed, and a leſs apartment with an out light, in which the doe may kindle or kennel, and under this window ſhould be a box or trough, in which may be put her meat; and thus may be made hutch over hutch, three or four ſtories high, keeping bucks and does a part from one another.

In the chuſing tame rich rabbets, it is more material to regard the richneſs of them, than their ſhapes; but let the bucks be as large as you can get them; and thoſe coats are eſteemed the richeſt, that have the equalleſt mixture of black and white hair together, but ſo that the black may rather ſhadow than the white; a black coat, with a few ſilver hairs, being much richer than a white coat with a few black ones.

The

The increaſe is more in the tame than the wild, the former bringing forth oftener than the latter.

The beſt food for them is the ſweeteſt, ſhorteſt, and beſt hay that can be got. This hay muſt be put to them in little cloven ſticks, that they may with eaſe reach and pull it out of the ſame, ſo as not to ſcatter or waſte but as little as may be; and ſweet oats and water ſhould be put for them in the troughs under the boxes, and this ſhould be their ordinary and conſtant food, all other being to be uſed phyſically, giving it them two or three times in a fortnight, to cool their bodies, ſuch as mallows, clover-graſs, four docks, blade of corn, cabbage or colewort leaves, and the like, all which do both cool and nouriſh them greatly; but you ſhould but ſeldom give them ſweet grains, becauſe nothing brings them to the rot more.

If they have any graſs cut for them, you muſt be very careful that there be no weeds nor hemlock amongſt it; for tho' they will eat it very greedily, it is preſent poiſon, killing them ſuddenly.

In general, the advantage of their dry meat is, that it prevents diſeaſes; and thoſe who commonly keep them upon freſh and moiſt food, as many do, giving them carrots and other eatable roots among it, would do well to change it for dry meat in wet weather: for moiſt food is the great cauſe of theſe creatures having the rot, and they are moſt of all ſubject to this in damp ſeaſons.

Their hutches muſt alſo be kept ſweet and clean, for the ſcent of their piſs and dung is ſo ſtrong, that it will be a very great annoy-

ance

ance both to themſelves, and thoſe that look after them.

As to the wild rabbets, there is properly but one breed of them, and all the direction that is needful in the choice is, that ſuch as are taken to begin a ſtock, be large, and big bodied, with a good deep fur, that hangs faſt upon their backs, and with ſtout limbs. The huſbandman who has waſte ground in his hands, that is fenced well, and not with live hedges, ſhould never omit this part of his ſtock, for the worſt of his ground will do, and the advantage he receives from them will be very great.

A ſmall number is ſufficient to be firſt turned in, for of all creatures uſeful to mankind, they are the greateſt breeders.

Experience ſhews that the wild rabbet ſucceeds better in ſome places than others; the young growing up much quicker, and the fleſh being finer, and better taſted. The reaſon of this is to be ſearched in the ſoil and the produce, and this may teach the huſbandman on which of ſuch grounds as ſeem proper, it will be moſt to his benefit to breed them.

In general, the ſhorter and ſcantier the graſs, the better is the taſte of the rabbet; the drier the ground the better they ſucceed; where there is much water they never are well flavoured.

Of all creatures water is the leaſt neceſſary to the rabbet, for we ſee the tame ones will live very well altogether without it, on moiſt food. Where the ſoil is drieſt, the air fineſt, and the water that there is in the way is running and clear, there the rabbets may reaſonably be expected to ſucceed beſt.

As I have obſerved that the common wild rabbet will very freely be kept tame, ſo it has been found, many years ſince, that thoſe which we uſually underſtand as tame rabbets, will live very well wild, eſpecially the hardier kinds. This is a conſideration of ſome conſequence, becauſe there is one of the tame kind that is, in every reſpect, better than the common wild one. This is that which is known by the name of the ſilver haired rabbet. It will live and thrive as well wild as the common ſort, and it is always better taſted, and fair to the eye, ſo that it brings a larger price. The ſkin alſo is of much more value, and the demand for it among the furriers is conſtant and certain.

For theſe reaſons it is, in many caſes, adviſeable to breed this ſort wild inſtead of the other; for though it often is ſo, it is not always. This, though as hardy as the other, requires a better ſupply of food, and is poor, and of little value, upon thoſe barren and heathy lands, on which the common wild rabbet ſucceeds very well.

The proper place for this kind is a park, where they may run at liberty among the deer, and other cattle, and where there is good graſs, though not rank, upon the ground; the other is the proper kind for the moſt miſerable and poor lands.

Plain Inſtructions for deſtroying Vermin, particularly ſuch as infeſt Houſes, Gardens, Dairies, Barns, Bees, Poultry, &c.

For deſtroying of BUGS.

TAKE a quantity of unſlacked lime, put it into a quart of water, and let it ſtand three or four days, then pour off the water, and add a quantity of common ſalt, the ſtronger both of lime and ſalt the better; waſh the ſides of the wall and bedſtead with this liquor two or three times a week, and it will kill them. Or,

Take a handful of wormwood and white hellebore, boil them in urine till it is half waſted, and waſh the joints of your bedſtead with it.

The gall of an ox mixed with vinegar, or the dregs of oil and ox gall mixed; rub the joints and cracks of the bedſtead with it, and it will kill them. Or,

Old oil and brimſtone powdered and mixed together, then anoint the bedſtead with it. Or,

Boil gule and vinegar together, then rub the bedſtead with, and it will kill them. Or,

Take a handful of rue and wormwood, and mix them with common oil, and as much water as will cover the rue and wormwood; let it boil till the water is all boiled away, then ſtrain out the oil from the herbs, and mingle with ſheep's ſuet

as much as the oil ; then anoint the bedſtead with it, and it is an infallible remedy. Or,

Take the rind of green walnuts bruiſed, and ſteeped in water three or four days, then waſh the room and bedſtead with it often. Or,

Get a trap about a yard and a half long, or more, if your bed is broad, and about half a yard in depth ; put it at the head of your bed, to the bottom of the pillow, and in the morning they will creep into it ; take it into your yard, knock it, and they will drop out, ſo you may kill them. They are made of wickers by baſket-makers. To conclude ;

Let your rooms be kept clean, ſet open the windows when you riſe, and lay your bed-cloaths open four or five hours, and it is the only way to prevent your having bugs.

For deſtroying F L E A S.

TAKE lavender and wormwood, and boil them in vinegar, well, and ſprinkle your blankets with it, or ſavory laid in your chamber will kill them.

Take wormwood well dried, and put it in a bag with holes in it, ſo place it under your bed ; or fleawort, laid under and about your beds, kills them ; or take wormwoood, nut-leaves, lavender, eye-avernon, and green coriander, put them under the bed or pillow, and the fleas will die. Or,

Take unſlacked lime, and ſtrew in your chambers. Penny-royal wrapt up in a cloth, and laid in your bed, drives fleas away : lay freſh once a week.

Or,

Or ſoup-lees and onions boiled together, and ſprinkle in the room, kills them.

Or, marſh-fleabane ſpread in your room, or burnt, will drive them away. Elder-leaves gathered, with dew on them, and laid in a chamber, will gather all the fleas thereinto, which you may kill, or throw out of the window.

Or, take an earthren diſh or platter, ſmear it all round with bulls fat, and it will gather the fleas to it; or ſmear it with goat's blood, and they'll come into it; or the blood of an ox mixed with ſoot, and rubbed on the inſide of the diſh, will make them come into it in a day or two.

Or, rub a ſmall piece of board over with hog's greaſe, and all the fleas will gather to it in the middle of the room.

Or, take the blood of a badger, ſmear a trencher over with it, and it will gather all the fleas to it, and kill them: or, coloquintida, oil, and wormwood, boiled in water, and ſprinkled about the room, kills them.

Or, take ſouthernwood, rue, wormwood, ſavory, walnut-leaves, lavender fleaſed. lay all thoſe, or ſome of them, under the blankets; or elſe boil them in vinegar and ſea-onions, and with that beſprinkle the bed.

To deſtroy RATS *and* MICE.

TAKE ratſbane, powder it, and mix it with freſh butter, or make it into a paſte with barley, or wheat meal and honey, and lay it on trenchers or boards where they come; they will eat it, and it makes them drink till they burſt. It is a ſtrong poiſon, therefore be very careful in

uſing it, and waſh your hands after it. Or unſlacked lime and oatmeal mixed, and laid on boards where they come, kill them.

Or, mix powdered glaſs and oatmeal with freſh butter, and lay it where they come; or filings of iron, mixed with oatmeal, or dough, of oatmeal flour, will anſwer the ſame purpoſe.

Or, take wheat or barley flour, mix honey or metheglin with it, and make it into a ſtiff paſte; if you mix a little white hellebore powdered with it, it is better. Hemlock ſeed thrown into their holes kills them.

To kill Field Rats.

The fields are generally bare in the dog days, then is your time to find out their holes or neſts, which are little and round, like an augur hole; you muſt put hemlock ſeed therein, or hellebore mixed with barley: they will eat it greedily, which kills them.

To preſerve Artichoaks from Rats *or* Mice.

They are great lovers of artichoaks, and will come to them in troops; to prevent this, wrap wool about their roots, and they will be gone. Or, hog's dung, or fig-tree aſhes laid about them, will drive them away.

To deſtroy MOLES.

TAKE a head or two of garlick, onion, or leek, and put it into their holes, and they will

will run out as if frighted, and you may with a ſpear or dog take them.

Or, pounded hellebore, white or black, with wheat flour, the white of an egg, milk and ſweet wine or metheglin, make it into paſte, and put pellets as big as a ſmall nut into their holes, they eat it with pleaſure, and it will kill them.

In places you would not dig nor break much, the fuming their holes with brimſtone, garlick, or other unſavoury things, drive them away; and if you put a dead mole into a common haunt it will make them abſolutely forſake it.

Or, take a mole ſpear or ſtaff, and where you ſee them caſt, go lightly; but not on the ſide betwixt them and the wind, leſt they perceive you; and at the firſt or ſecond putting up of the earth, ſtrike them with your mole ſtaff downright, and mark which way the earth falls moſt: if ſhe caſts toward the left hand, ſtrike ſomewhat on the right hand, and ſo on the contrary to the caſting up of the plain ground, ſtrike down, and there let it remain: then take out the tongue in the ſtaff, and with the ſpattle or flat edge dig round about your grain to the end thereof, to ſee if you have killed her; and if you have miſſed her, leave open the hole, and ſtep aſide a little, and perhaps ſhe will come to ſtop the hole again, for they love but very little air, and then ſtrike again; but if you miſs her, pour into her hole two gallons of water, and that will make her come out for fear of drowning; mind them going out of a morning to feed, or coming home when fed, and you may take a great many.

Or, it is ſaid, that in engendering time, if you

you lead or draw a bitch mole in a ſtring along the ground, the buck will trace her, and ſo you may catch them in a pot ſet in the ground.

To deſtroy Weaſles.

Take ſal-ammoniac, pound it, and with wheat flour and honey make it into a paſte, with the white of an egg, lay it in pellets where they come, and it will kill them.

To prevent their ſucking hens eggs, lay rue about the roost, and they will not come near them.

To deſtroy Caterpillars.

To prevent their numerous increaſe on trees, gather them off in Winter, taking the prickers away that cleave to the branches, and burn them.

Or, anoint the bottom of the tree round about with tar, then get many piſmires and put them in a bag; hang them ſo that they may touch the bottom of the tree; the piſmires not being able to get down for the tar, will devour the caterpillars for want of food.

Or, when they are upon cabbage or coleworts, take ſome ſalt water, and water them with it, and it will kill them.

Or, ſhake them off the plants betimes in a morning, for while they are touched with the cold of the night, they eaſily drop off.

To deſtroy Green Bugs *that hurt plants and roſe-trees.*

Sprinkle the places where they fix with ſtrong vinegar

vinegar mixed with the juice of henbane; or, ſome water the plants haunted by them with the cold decoction of muſtard and laurel ſeed in water; ſome quaſh them with their fingers, which is a good way; or flee-bane boiled in water, and ſprinkled, will kill them.

To deſtroy Vine-Fretters.

Stick a rod half a foot high in the ground, with mugs or cups turned over the top of it, and you will find that they creep under them for ſhelter, ſo you may eaſily kill them.

Or, put eight or nine crabs in an earthen pot with water, and let them ſtand eight days in the open air, then take off this water, and ſprinkle your plants in their infancy, repeat this once in eight days, and it will kill moſt ſort of vermin.

To deſtroy Frogs.

Take a ſheep, ox, or goat's gaul, and bruiſe it by the water ſide; the frogs will gather to it, and it will kill them.

To prevent their croaking, ſet a candle and lanthorn upon the ſide of the water or river, that waters your garden.

Toads will not come near your garden, if you plant ſage and rue round about it.

To drive Snakes *and* Adders *from the Garden.*

Plant wormwood in various parts of it, and they will not come near it.

Or, ſmoak the places with hartſhorn, or lily roots

roots, burnt in a fire-pan, and they will fly from the place.

Or, old ſhoes burnt, or other ſtinking ſtuff will drive them away; or aſh-tree boughs, while green leaves are on them, laid about your ground will have the ſame effect.

Or, take a handful of onions, and ten river crab fiſh, beat them well together, and lay it in the place where they come, and you may kill many of them together.

To keep Earwigs *and* Piſmires *from Flowers.*

Take glue boiled in linſeed oil, and lay this round a tub four inches broad, and if they go to climb up, they will ſtick in it: but if any ſhould get up, lay on the top of the flowerſticks, paper caps, lobſters claws, with ſome wool or tow in them, and in the morning you will find many in them.

Or, make a box with cards or paſteboard, prick it full of holes with a bodkin, and put in them powder of Arſenick and honey mixed together: having the boxes on the trees, and it will kill them. You muſt be careful the holes are not made too large, leſt the bees get in, and be poiſoned.

Or, hang a glaſs bottle in a tree, with a little honey in it, or other ſweet liquor, and it will bring the ants into it, which you muſt ſhop and waſh, and place there again.

To deſtroy Snails.

Set tiles, bricks or boards, hollow againſt the walls, pales, &c. and they will creep under them

them for ſhelter. About Michaelmas they get to ſuch places for ſecurity the whole Winter, except you prevent it by deſtroying them in December, which is the eaſieſt, beſt and ſureſt way to deſtroy them.

Or, look for them by break of day, or after rain, then they come out of the earth to feed, and are eaſily killed.

Alſo obſerve, not to pluck that fruit they have begun with, but les it alone, for they will end that before they begin another.

To prevent Flies *teazing Cattle.*

Boil bay-berries in oil, and anoint them with it, and they will never ſit on cattle ; or, wet the hair of horſes with the juice of the leaves of gourd at Midſummer, and they will not moleſt them. If cattle are anointed with the juice of areſemart, flies will not come near them, tho' it is the heat of Summer.

To deſtroy Earwigs.

Place hoofs, horns, crabs, or lobſters claws on branches of trees, and they will creep into them ; early in the morning take them gently off and ſhake them into a tub of water, of on the ground, and tread on them.

To deſtroy Waſps *and* Hornets *that detriment Bees.*

In Spring or Summer, before they are increaſed, deſtroy the old ones, for a few increaſe to a multitude.

Or,

Or, ſcald them, if in the thatch or hollow tree, or ſmoak them with any ſtinking combuſtible matter.

Or, put cyder, verjuice, or ſour drink, in a ſhort necked phial, and you may catch many in it. Alſo lay ſweet apples, beaſts intrails, or other fiſh, or treacle in an earthen diſh, and a little water mixed with it, or any thing they love, and they will flock about it, that you may kill many at once.

Or, put pieces of lighted brimſtone-rags into the waſps holes, where the neſt lies, and then fill it up with earth.

Swallows are great enemies to bees; therefore take care to deſtroy their neſts wherever you find them.

To deſtroy Gnats.

Shut your windows cloſe in Summer towards the evening, and ſmoak your rooms with brimſtone, and burn ſtraw in them, and they will fly into the flame, or be choaked.

Or, the ſmoak of burnt fern will drive away gnats, ſerpents, and other venemous creatures.

Or, aſh-leaves hung up in a room attracts them, that they are leſs troubleſome; alſo, balls made of new horſe-dung, and laid in a room, will do the ſame; by this means you may overwhelm them with a baſon, and keep them there.

To deſtroy Worms.

Water, wherein the leaves and ſeeds of hemp are

are ſodden, ſprinkled on earth, will bring them out.

Or, ſea water ſprinkled on the ground, kills them. Some ſay, ſoot ſtrewed on the ground, kills them. Others commend chalk and lime, ſtrewed on the ground.

Take a quantity of green walnut huſks, and rub them on a brick or tile, holding them at the bottom of a pail of water till the water is become bitter, which ſprinkled on the ground, will bring the worms out in a quarter of an hour.

Or, water your garden with the brine of ſalt meat, and it kills them; or, with a ſtrong lixivium made of aſhes: or, lay aſhes or lime about any plant, and neither ſnails nor worms will come near it; as the moiſture weakens, you may renew it. Some ſmoak their holes with ox or cow dung; or the mother of oil ſprinkled on their holes kills them.

Or, after rain or ſun-ſet gather them when they come out of their dens, and kill them.

Or, ſet the leaves and ſeeds of hemp in water, and ſprinkle it on the earth, brings forth worms.

Or, take a poker, with two prongs is beſt, and ſtick it in the ground, and ſhake it well, brings out worms; morning and evening is the beſt time.

To deſtroy Worms *in Apple-trees.*

Lay a ſea onion about the trees, to preſerve them from worms; if they come naturally, bull's gall, or hogs dung mingled with man's urine, and poured to the roots, deſtroys them; but if they are hard to deſtroy, the bark muſt be digged into with a braſs pin, or ſuch like tool, and

tended till the point take upon the worms, and drives them from the place; but where there is a place ulcerated, ſtop it with ox dung: an apple tree plant, the root being anointed with bull's gaul, they and their fruit will be free from worms.

To prevent Worms *eating Cheſts of Drawers, or Wood.*

Rub them with linſeed oil; or rub them with wormwood, rue, or other bitter herbs, preſerves them, and all wooden houſhold ſtuff, that is rubbed with the lees of linſeed oil, and poliſhed, will look pleaſant.

To deſtroy Polecats.

If you can conveniently have a channel about your pigeon houſe, it will preſerve them and all other fowl, for no beaſt of prey will take the water.

Or, ſome make a dead fall to take them, which is made of a ſquare piece of wood, weighing 40 or 50 pounds; they bore a hole in the middle of the upper ſide, and ſet a crooked hook faſt in it; alſo they ſet four forked ſtakes faſt in the ground, and they lay two ſticks acroſs, on which ſticks lay a ſtrong ſtaff to hold the dead fall up to the crook, and under this crook, they put a ſhort ſtick, and faſten a line to it, and this line muſt reach down to the bridge below; and this bridge you muſt make about five or ſix inches broad. Then ſet on both ſides of this fall boards or pales, or hedge it with cloſe rods, and make it ten or twelve inches high; let the paſſage be no wider than the fall is broad.

To

To deſtroy Badgers.

Badgers are pernicious creatures, and deſtroy lambs, pigs, and poultry.

Some take them in a ſteel trap, or a ſpring, as foxes are taken.

Others make a pit-fall five feet deep, and four long, making it long at the top and bottom, and wider in the middle; then cover it with ſome ſmall ſticks and leaves, ſo that he may fall in when he comes on it. Sometimes a fox is taken thus.

Others hunt the badger to his hole in a moonlight night, and dig him out.

Hedgehogs always make their cave or cabbin contrary to the wind.

To deſtroy Foxes.

Take a ſheep's paunch, and tie it to a long ſtick, then rub your ſhoes well upon it, that he may not ſcent your ſweaty feet; draw this paunch after you as a trail, a mile or more, and bring it near ſome thick headed tree; leave your paunch, and get into the tree with a gun, and as it begins to be dark, you will ſee him come after the ſcent of the trail, where you may ſhoot him: draw the trail if you can to the windward of the tree.

The beſt way is, to ſet a ſteel trap in the plain part of a large field, out of the way of all paths, yet not near a hedge, or any ſhelter: then open the trap, ſet it on the ground, and cut out juſt the form thereof in a turf, and take out ſo much earth as to make room to ſtay it; then cover it a-

gain very neatly with the turf you cut out; and as the joint of the turf will not close exactly, get some mold of a new cast up mole-hill, and put it close round the turf, sticking some grass in it as if it there grew; make it curious and neat, that it might even deceive yourself. Ten or twelve yards from the trap, three several ways, scatter some of the mole-hill mold very thin, on a place fifteen or sixteen inches square; then on these places, and where the trap is placed, lay three or four small bits of cheese, and then with a sheep's paunch draw a trail of a mile or two long to each of the three places, and from thence to the trap, that the fox may come to one of these places first, for then he will approach the trap more boldly; and thus you will never fail of him. Be sure let your trap be loose, that he may draw it to some hedge or covert, or he will bite off his leg and be gone.

To make a Spring Trap.

Tie a string to some pole set fast in the ground, and to this string make fast a small, short stick, made thin on the upper side, with a notch at the lower end of it; then set another stick fast in the ground, with a nitch under it; then bend down the pole, and let both the nicks or notches join as slight as may be; then open the noose of the string, and place it in his path or walk; and if you lay pieces of cheese, flesh, and such like, it will entice him that way.

Or, grease the soals of your shoes with hog's fat a little broiled, and as you come from the wood, drop in several places as you pass, a piece of roasted swine's liver, dipt in honey, drawing after

after you a dead cat, and he'll follow you, ſo that you may ſhoot him.

A Hook to take a Fox *tied to a tree.*

This hook is made of large wire, and turns on a ſwivel, like the collar of a greyhound; it is frequently uſed in catching wolves, but oftener for the fox. They hang it from the ground ſo high that he muſt leap to catch it: and bait it with fleſh, liver, cheeſe, &c. and if you run a trail with a ſheep's paunch as before directed, it will draw him the more eaſily to the bait.

Methods of taking ſmall Birds *with Lime-twigs.*

Cut down the main branch or bough of any buſhy tree, whoſe branch and twigs are long, thick, ſmooth and ſtraight, without either pricks or knots; when you have picked off the leaves, make the twigs neat and clean, then take the bird lime, well mixed and wrought together with gooſe-greaſe, or capon's, which being warmed, lime every twig therewith within four fingers of the bottom.

The body from whence the branches have their riſe muſt be untouched with lime.

You muſt be carerul not to daub your twigs with too much lime, for that will give as much diſtaſte to the birds, as too little will not hold them when they are there.

Having ſo done, place your bruſh in ſome quickſet, or dead hedge, near the town's end, back yard, old houſe, or the like; for theſe

are the reſorts of ſmall birds in the Spring-time. In the ſummer and harveſt in groves, buſhes, or white thorn trees, quickſet hedges, near corn fields, fruit trees, flax and hemp lands; and in the Winter, about houſes, hovels, barns, ſtacks or other places, where ſtand ricks of corn, or ſcattered chaff, &c.

As near as you can to any of theſe haunts, plant your lime buſh, and plant yourſelf alſo at a coovenient diſtance, undiſcovered, imitating with your mouth ſeveral notes of birds, which you muſt learn by frequent practice, walking the fields for that purpoſe very often, obſerving the variety of ſeveral birds ſounds, eſpecially ſuch as they call one another by.

To ſcare Crows, Ravens, Jack-daws, &c.

Make a hole in the ground where they come, let it be about a foot deep and two feet over, and ſtick the long back feather of a crow, or other fowl, round the edges thereof, and ſome at the bottom; then make ſeveral of theſe holes, if the ground be large, and it will fright them away.

Dead crows hung up will much affright them; but among cherry-trees and other fruit trees, draw a line from tree to tree, and in various places faſten a black feather, and this will do.

To take Bulfinches, Goldfinches, &c.

The bulfinch is a very pernicious bird, and in the Spring will make great deſtruction among the

the plum and currant trees. The beſt way to take them, is to lime the twigs.

Goldfinches are as bad for gooſeberry-buds, and muſt be taken the ſame way.

Sparrows are great devourers of corn; uſe the ſame method for them, and all other ſmall birds.

A Remedy by which a dog bitten by another that is mad, may be cured.

Take three plants of that herb which is called roſe-plantain, and having chopped it ſmall with a proper quantity of butter, let the dog that is bit take it the firſt day; the ſecond day give him five plants ordered as before; the next day ſeven.

The following are the evident ſigns by which a mad dog may be known, and likewiſe avoided.

A mad dog is ſeemingly rapacious and thirſty, yet eats and drinks nothing; his eyes are fierce and flaming; he hangs down his ears and thruſts out his tongue; froths much at the mouth, and barks at his ſhadow; oftentimes runs along with a melancholy countenance, without barking at all; frequently pants for breath, as if tired with running; carries his tail bent inwards; runs without diſtinction againſt all he meets, with great fury, and bites; hurying on in a haſty and uncertain courſe. Dogs that are well are afraid, and fly both at the ſight and barking of one that is mad. The firſt mad ſympton in a dog, is an unuſual trembling.

Receipt to cure Poultry ſtung with any venomous Worms, or other poiſonous Thing.

This you perceive by their lounging and ſwelling; in which caſe anoint them with rue and butter mixt together.

To prevent your Trees from being peeled by Hares, Rabbets, or other Animals.

Take tar, which mix with any kind of greaſe, and boil it over the fire ſo as both many incorporate, then with a bruſh daub over the ſtem of the trees as high as they can reach; do this in November, and it will ſecure the trees for the whole year, it being the Winter-time only when they feed on the bark.

To cure the Pip in Poultry.

A pip is a white thin ſcale growing on the tip of the tongue, and will hinder poultry from feeding. It is eaſy to be diſcerned, and proceeds generally from drinking-puddle-water, or for want of water, or eating filthy meat. The cure is, to pull off the ſcale with your nail, and then rub the tongue with ſalt.

To cure the Rup.

The rup is ordinarily known by the ſtaring or turning of the feathers backwards. To cure this you muſt pull away the feathers, and open the ſore, thruſt out the core, and then waſh the place with ſalt and water, or with brine.

To cure the Flux.

The flux in poultry comes with eating too much moift meat. The cure is, to give them peas and bran, ſcalded.

To cure a ſtoppage in the belly.

This is a diſtemper contrary to the flux, and affects them ſo that they cannot move. To cure it, you muſt anoint the vents, and then give them ſmall bits of bread, or corn, ſteeped in urine.

To cure Lice.

If you poultry be much troubled with lice, as it is common, proceeding from corrupt food, or want of bathing, or fluttering in ſand, aſhes, or ſuch like, take pepper, ſmall beaten, and mix it with warm water, waſh your poultry therein, and it will kill all ſorts of vermin.

To cure Sore Eyes in Poultry.

In this caſe take a leaf or two of ground-ivy, and chewing it well in your mouth, ſuck out the juice, and ſpit it into the ſore eye, and it will aſſuredly heal it, as hath been often tried.

THE

THE

Shepherd's Barometer;

Or, certain Rules *to judge of the* WEATHER: *grounded on fifty years experience and obſervations, by an ancient ſhepherd on the* South Downs, Suſſex.

THE ſun. If the ſun riſes red and fiery, it certainly betokens more or leſs wind and rain, this obſervation agrees with the old Engliſh rule;

If red the ſun begins his race,
Be ſure that rain will fall apace.

If cloudy at ſun-riſing, and it ſoon decreaſes, it is a certain ſign of fair weather: agreeable to this an obſervation of Pliny's, in his natural hiſtory, which ſays—If at ſun-riſing the clouds are driven away, and retire as it were to the weſt, it denotes fair weather.

There is an old proverb to this purpoſe, which alſo deſerves our notice:

A red evening, and a grey morning, ſet the pilgrim a walking.

Clouds. Little round clouds like a dapple grey, and at the ſame time a north-wind blows, denotes fair weather for a few days.

Lord

Lord Bacon ſays, he had always obſerved, that if clouds appear white, and fly to the north-weſt, we had generally ſeveral days of fine weather. One of our old Engliſh minor poet ſays, (and it generally holds good)

If woollen fleeces ſpread the heavenly way,
Be ſure, no rain diſturbs the Summer day.

And Pilny, to the ſame purpoſe, ſays :
If the ſun be ſurrounded with an iris, or circle of white clouds, and they equally fly away, 'tis a ſign of fair weather.
And this old Engliſh proverb in often right ;

In the decay of the moon,
A cloudy morning bodes a fair afternoon.

Large clouds, like rocks, denote large ſhowers : this is an old obſervation, and generally proves true : in one of our old kalendars it is expreſſed thus :

When clouds appear like rocks and towers,
The earth's refreſh'd by frequent ſhowers.

But the quotations from other obſervers do not in the leaſt diminiſh the credit of our ſhepherd, who certainly made his obſervations from nature and experience, and then compared them with what others had wrote before him.
If the weather be hazy, and the wind falls away, and ſmalls clouds increaſe, depend on much rain, and that ſoon.

If

If large coulds break away decreaſe in bulk, and aſcend higher in the atmoſphere, it is a certain ſign of fair, pleaſant weather. The large black clouds in Summer evenings, which ſeemingly threaten much rain over night, are frequently reſolved into dews, and produce a very miſty morning, and a fine warm day.

Miſts. When they riſe in low ground, and ſoon vaniſh, nothing is a ſurer ſign of fair weather; when they are heavy, riſe ſlowly, and keep viſible on the hill-tops, they are ſoon condenſed, and fall down in rain, which, however, ſeldom laſts long.

A miſt in the morning, before ſun-riſing, and at or about the full of the moon, betides fair weather; but if miſts appear in the new moon, you may depend on more or leſs rain in the old; and when they ariſe in the old, there is generally rain in the new.

Winds. South weſt winds and rain, north-eaſt winds and fair weather, generally come together; and in nine years time I have obſerved, there is as much ſouth-weſt as north-eaſt wind; conſequently, as many wet years as dry ones.

If the wind gets into the north-eaſt, and remains three days without rain, it generally continues in that quarter for nine or ten days, which will be fair; and then it commonly turns to the ſouth, and ſome rain follows.

If the wind ſhifts from the ſouth to the north-eaſt, and it rains at the ſame time, and continues north-eaſt but two days without rain, it commonly abides chiefly in that quarter for two, and ſometimes three months.

If

If the wind has been chiefly north for two month, and then comes to the ſouth, you may expect a few fine days notwithſtanding ; but if it continues ſouth five or ſix days, depend on rain : but if it turns to the north again, it is undoubtedly dry.

If the wind ſhifts from the north to the ſouth in a few days without rain, and turns north again with rain, returns to the ſouth in one or two days, and ſo on for two or three times keeps ſhifting, it will afterwards fix ſouth or ſouth-weſt for two months or more.

A week of fair weather, with a ſouth wind, forebodes a great drought, eſpecially if there has been much rain out of the ſouth before.

When the north wind firſt clears the air, which generally happens once a week, you may depend on a fair day or two.

Clouds. In Summer, or Autumn, when the wind has been in the ſouth two or three days, and the weather very hot, and the clouds riſe one above another, with white tops, like battlements of a tower, and joined together, and black on the hills, depend on thunder and rain very ſpeedily.

You may ſometimes ſee two clouds, one to the left, another to the right, which denotes a ſudden ſhower.

When clouds float in a ſerene ſky, you may expect winds, and if they riſe from the ſouth, depend on rain; and if you ſee them driving at ſunſet, come from what quarter they will, depend on a tempeſt approaching. Clouds that have a duſky hue, and move ſlowly, are laden with hail ; if they have a blue caſt, with large hail ; if yel-

low, ſmall. Lord Bacon remarked, that the proverbs are the philoſophy of the common people, and as many are founded on experience, and are undoubtedly true, ſuch are worth our notice, and ought to be remembered.

The faſter it rains, the ſooner it will be over, and ſudden rains never laſt long. But when the air grows thick, and the ſun, moon and ſtars ſhine dim, then it is like to rain ſix hours ſucceſſively.

If it begins raining in the ſouth, attended with a high wind for two or three hours, and afterwards falls, but the rain continues, it will in all probability laſt for ten hours or more, unleſs a ſtrong north wind ſhould riſe, which generally clears the air, and carries off the rain; theſe rains ſeldom happen above once a year.

When it rains an hour or two before ſun-riſing, it generally clears before noon, and continues ſo the whole day: but if the rain ſets in an hour or two, after ſun-riſing, it generally rains all day, unleſs the rainbow appears a little before the rain begins, then it ſeldom laſts long.

Of Spring *and* Summer.

If the laſt twenty days of February and ten firſt days of March be chiefly rain, then the Spring and Summer are generally wet.

A rainy Winter betokens a dry Autumn; a dry Spring denotes a rainy Winter.

When October and November are warm and rainy, January and February are froſty and cold: but if October and November be ſnow and froſt, then January and February are open and mild.

As

As the following old proverbs are in ſome meaſure true, they ought not to be forgot, and are therefore here inſerted.

If the graſs grow in Janiveer,
It grows the worſe for't all the year.
TheWelchman had rather ſee his dam on the bier,
Than to ſee a fair Februeer.
March wind, and May ſun,
Makes cloaths white, and maids dun.
When April blows his horn,
Its good for both hay and corn.
An April flood,
Carries away the frog and her brood.
A cold May and a windy,
Makes a full barn and a ſindy.
A May flood
Never did good.
A ſwarm of bees in May,
Is worth a load of hay ;
But a ſwarm in July
Is not worth a fly.

To ſhew the approach of wet and dry weather.

Take a piece of dry whipcord, and tie a plumbet at the end, hang it againſt a wainſcot or dry wall, and draw a line under it, exactly at the bottom, where the plumbet reaches ; do this in moderate weather, that is, when neither very dry nor very wet ; and when it is like to be wet weather, the plumbet will be above the line, and when dry, it will reach below the line ; but what is better, take a pair of ſcales, in one put a braſs pound weight, in the other a pound of dry ſalt ; let

let there be a ſhelf or board under the ſcales to prevent their ſinking too low, and when it is inclined to rain, the ſcale with the ſalt will ſink the loweſt; when inclined to dry, the ſcale with the braſs weight will weigh up the ſalt.

Bat-Fowling, the manner of it.

OBſerve where theſe birds rooſt in great numbers, as they generally do in ſhrubs, hedges, or trees; then go in a dark night, and have a wicker with a handle to hold on high, in which place pieces of link or great candle, to make a great light; ſome have a pan to make a fire, and carry it at their back; but then one muſt put fire on as faſt as it burns out; then let one go with a pole, and beat the contrary ſide, and two or three with you, carrying long boughs; and when they are unrooſted with beating, they will come flying about the light, ſo that they with the bough may eaſily ſtrike them down; if among ſhrubs, as in a wood, let one on each ſide beat at a pretty diſtance. This muſt be done in a pure ſtill night. Depth of Winter is the beſt for this ſport. Some uſe nets made like a racket at the end of poles with which they are eaſily knocked down.

A Secret to hinder pigeons from quitting a pigeon-houſe.

TAKE the head and feet of a gelt goat, and boil them together till the fleſh ſeparates from the bone; take this fleſh and boil it again in the ſame liquor, till the whole is conſumed; bruiſe into this decoction, which is very thick, ſome potter's earth, out of which you are to take all the ſtones, vetch, dung, hemp, ſoot and corn; the whole muſt be kneaded together, and reduced to a paſte of dough, which form into ſmall loaves about the thickneſs of two fiſts, and dry them in the ſun or oven, and take care they do not burn; when they are baked, lay them in ſeveral parts of the pigeon houſe, and as ſoon as they are ſet there, the pigeons will amuſe themſelves with pecking them, and finding ſome taſte therein which pleaſes them, they will not afterwards leave it but with regret. Others take a handful of ſalt, which they candy, and afterwards put into the pigeon houſe. Some take a goat's head, and boil it in water with ſalt, cummin, hemp and urine; and then expoſe it in the pigeon houſe, with which they amuſe the pigeons. Laſtly, there are thoſe who fry millet in honey, and add a little water thereto to prevent its burning too; this preparation is a repaſt to them, and will cauſe them to have ſuch an affection for their ordinary habitation, that they will be ſo far from abandoning it themſelves, that they will draw ſtrange pigeons to it.

☞ As it is very probable that this Book may fall into the Hands of many Perſons in the Country, whoſe occaſional Buſineſs may call them to London, or whoſe Inclinations may lead them to ſettle in the Metropolis, I would earneſtly recommend to their Peruſal the following Book, which is Publiſhed with the *moſt benevolent intention* of guarding the *honeſt* and *unwary* from the Tricks and Artifices of *villainous* and *deſigning* Wretches of both Sexes; and I the rather recommend this Work, as the Peruſal of it has *already ſaved* ſeveral very worthy Perſons from *ruin*: for though Country People are no Way deficient in point of *Abilites*, yet it is impoſſible that they ſhould guard againſt Snares they have never heard or thought of, and which the Honeſty of their Hearts would never allow them to ſuſpect. Therefore the Peruſal of it to thoſe who deſign going to London, may very truly be allowed worth its Weight in Gold, although,

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